

**ENVR 4500 ENVIRONMENTAL SCIENCE AND STUDIES
THESIS PROJECT COURSE OUTLINE 2018-2019**

CREDIT: 6 hours (fall and winter terms)

PREREQUISITE: Normally, good standing as a Third or Fourth Year Honours student in Environmental Science or Studies

COORDINATOR: Dr. Rick Baydack
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Office hours: By appointment

1. EXPECTATIONS

ENVR 4500 is an independent research project course. It counts for 6 credit hours, and it extends over both the fall and winter terms. You will need to arrange to work with a particular professor or qualified advisor (i.e., someone with a track record of research or study in your area of interest) on a mutually agreeable research problem. Co-advising arrangements are encouraged. Students in ENVR 4500 are expected to maintain a steady level of work during the entire academic year, likely committing at least 6-8 hours per week to their project. Students must consult regularly with their advisor to ensure that their work stays on track. Every student in ENVR 4500 is expected to conform to university standards regarding research at all times.

2. CLASS MEETINGS AND DEADLINES:

There are no regular lectures or labs, but the following meetings of the class will be scheduled in a location to be determined:

A project proposal presentation in **mid-October 2018**
A progress update presentation in **early February 2019**
A final report presentation in **early April 2019**

Final dates will be selected with students and advisors based on their availability.

In addition, students should meet individually with their advisor regularly to discuss the status of their research. If you have difficulty meeting with your advisor, or feel you are being neglected, please contact the course coordinator as soon as possible so that we may remedy the situation.

Notes:

1. All submissions for the course should be provided electronically to the advisor and course coordinator using the 'Dropbox' function on the University of Manitoba Learn (www.umanitoba.ca/d2l) website and/or by email.

2. The finalized version of your project proposal should be submitted for grading the day of the oral proposal presentation.
3. The progress report should be submitted at least 1 day prior to the oral progress presentation.
4. The final thesis report should be submitted at least 2 days prior to the oral final presentation.

3. COURSE CONTENT AND PROCEDURES:

The course is designed to give Honours students experience in conducting scientific environmental research, from the inception and planning stages through study execution, data analysis, written reporting and oral communication. Each student will be responsible for finding an advisor, from among University of Manitoba faculty or other environmental professionals, who is willing and able to supervise the research project. Data collection for the project is generally carried out during the fall and winter terms. Students may also use data gathered during the preceding summer's employment, provided that both the employer and the student's project advisor agree in writing beforehand to the student's use of these data. Non-experimental projects involving summarization and analysis of existing data or the theoretical exploration of a problem using literature and/or web-based sources are also acceptable. The course coordinator will act with the advisor to grade and assess student progress.

3.1 Registration in the course

Prior to being granted permission to register in the course, each student will prepare a 1-2 page summary of their proposed thesis research and submit that to the course coordinator. The summary should generally identify the need for the study based on past work in the area, research purpose, objectives and goals, possible methods to be employed, and the name and affiliation of the proposed advisor(s).

3.2 Research proposal and review

In consultation with the advisor, each student will prepare an 8-10 page written research proposal before starting a project. The student will present the proposal orally to course participants and the final version of their proposal in accordance with the guidelines below to their advisor and the course coordinator in mid-October.

3.3 Progress report

Each student will prepare a written progress report near the beginning of the Winter term, by which time the project should be well underway. The report will be orally presented to the advisor and the course participants and reviewed in late-January.

3.4 Final Report

The final thesis report should be written in accordance with the guidelines given below. All reports will be presented orally at the end of the Winter term.

3.4 Departmental copy

The advisor and course coordinator will agree upon any final editorial corrections that the student should make to the report. Major substantive changes are not permitted at this stage. One final corrected copy of the report should then be submitted electronically to the course coordinator before the end of the Winter academic term

4. GRADING

The course grade for each student will be assigned by the course coordinator, on the basis of evaluations from the student's advisor and the course coordinator.

Marks will be allocated as follows:

1. The research proposal = **5%**
 2. The research proposal presentation = **5%**
 3. The progress report = **10%**
 4. The progress report presentation = **5%**
 3. The comportment of the student (evaluated by the advisor only) = **25%**
 4. The report as a written document = **40%**
 5. The final oral presentation = **10%**
- Total = **100%**

Resultant values will be a mean of the marks submitted by the advisor and course coordinator.

4.1 Grading scale

A+	90-100	C+	65-69
A	80-89	C	60-64
B+	75-79	D	50-59
B	70-74	F	0-49

4.2 Evaluation and Withdrawal

Students will receive evaluations from their advisor after the research proposal review meeting and the progress report review meeting prior to the University Voluntary Withdrawal Deadline (January 18, 2019). The course coordinator will provide each student with their grade summary at any time throughout the year upon request.

4.3 Communication with students

The University of Manitoba has a new policy on electronic contact with students that requires **all email contact on university business to use students' official University email addresses**. The policy is at:

http://umanitoba.ca/admin/governance/governing_documents/community/electronic_communication_with_students_policy.html

4.4 Academic regulations and expectations (additional information in Schedule A)

- **Recording Class Seminars:** Dr. Rick Baydack of the University of Manitoba holds copyright over the course materials and lectures that form the components of this course. No audio or video recording of lectures is allowed in any format, openly or surreptitiously, in whole or in part without permission of the Instructor. Course materials are for the participant's private study and research.
- **Academic Dishonesty:** Plagiarism, cheating or impersonation in the completion of assignments are very serious offences. Students caught doing so may be debarred from class with further risk of academic penalty and possible expulsion. All graded work must be independent.
- **Academic Supports:** The University of Manitoba provides many services and supports to encourage good scholarship and encourage all members and students to maintain a respectful work and learning environment. Policies have been developed regarding threatening behavior, or assaults whether verbal or physical to support victims and discipline offenders. For more information on these see Schedule A attached and available on the UM Learn site.
- **Department Policies**
<http://umanitoba.ca/faculties/environment/departments/geography/index.html>
- **Student Advocacy** - <http://umanitoba.ca/student/advocacy/>; 520 University Centre; 204 474 7423; student_advocacy@umanitoba.ca

5. GUIDELINES FOR WRITING THE RESEARCH PROPOSAL:

The Honours Project research proposal is generally 8-10 double-spaced pages in length. The following points should generally be covered, preferably in the order given. These do not represent required section headings for the proposal, however, before you begin to write, you should consult with your advisor to determine if all of these points are relevant to your proposal and if there are any additional items that should be included. These points are:

- Title Page
- Introduction and Background
- Research Purpose and Objectives and/or Hypotheses
- Planned Methods
- References

5.1 Title Page

The title page should include your name, the title of the proposal, advisor's name, course number, and date of submission.

5.2. Introduction and Background

For the research proposal, this section should comprise up to half of the written work. The intent is to summarize the current state of the subject you are going to investigate, and provide a context for the work you are going to propose. When done properly, the reader will be led to the same conclusion as yourself: that the work you are proposing is

both a logical extension of the work that has preceded it and a necessary contribution to the field of study. This section is considered preliminary, as by the time you complete your research in the spring, you will have also done more reading on the subject, and the literature review you provide in your final report will be more complete than the one you are able to complete for your project proposal.

5.3 Research Purpose and Objectives and/or Hypotheses

In this section, you must clearly state the overall purpose of your research project and outline the specific research objectives and goals you expect to achieve. Note that some research projects lend themselves to hypothesis testing, others do not. Discuss what is best for your particular case with your advisor. To be effective, this section should be brief and to the point (i.e., no more than 1 page). A numbered list is an effective way to state your objectives. You should confer with your advisor on this section in some detail, since he/she will be able to help you define realistic objectives and goals and/or hypotheses for your project. Ultimately your advisor and the course coordinator will evaluate your objectives and goals with the intent of determining if they are realistic and suitable within the context of an ENVR 4500 project.

5.4 Planned Methods

In this section, you need to provide some detail about how you plan to carry out your research project. Specific methods should be described for each research objective. You do not need to provide elaborate details about specific techniques, but you do need to defend your choices. For example, you might outline a general scheme for an experiment, a survey, video production, or provide an example derivation for a calculation. A flow chart is very useful to clearly outline what you plan to do. As with the Introduction, you need to cite references for the work you use to justify the chosen techniques. Note that University of Manitoba Guidelines should be consulted to determine if any approvals are required for your proposed research (http://umanitoba.ca/research/orec/orec_home.html).

5.5 References

See Section 7 below.

6. GUIDELINES FOR WRITING THE PROGRESS REPORT:

The written progress report should concisely describe and analyze for the advisor and course coordinator the findings of the project to date. Progress reports are generally no more than 5 pages in length. A suitable format could include (but be sure to discuss the format with your advisor who might suggest an alternative approach):

1. Purpose and Objectives (restate briefly; cite your research proposal for elaboration)
2. Methods (cite your research proposal for the basics; describe any modifications fully)
3. Preliminary Results and Discussion, including comparisons with literature or web-based sources
4. Challenges and Problems

5. Outlook for successful project completion

The progress report should state the project's purpose, objectives, and methods very briefly if these have not been altered from the original research proposal. Any substantive changes in the proposal should, however, be described fully. The preliminary report should emphasize mainly the preliminary results that have been obtained to date, wherever possible through a preliminary graphical or tabular presentation of data and some assessment of their significance. This presentation should be integrated with a brief discussion comparing the results obtained with the outcomes expected on the basis of relevant literature. An appraisal of research challenges and problems should be described, as well as a timeline or an assessment of the potential for the project's successful completion.

7. GUIDELINES FOR WRITING THE FINAL THESIS REPORT:

The final honours thesis report should generally follow University of Manitoba graduate theses in format (http://umanitoba.ca/faculties/graduate_studies/thesis/guidelines.html). An honours thesis is generally at least 20 pages in length, exclusive of tables, figures and references.

The format for most honours theses is as follows (but discuss alternate formats with your advisor):

1. A **title page** (not numbered), as follows:

.....

The title of the report

by

Author's Name

A report submitted to the Department of Environment and Geography,
University of Manitoba,
in partial fulfillment of the requirements for course
ENVR 4500 (Honours Thesis Project)

Month, year

.....

2. An **abstract** of maximum 200 words summarizing the problem, methods, results and conclusions (numbered page i - sequential small Roman numerals follow)
3. **Acknowledgements** (page ii)
4. **Table of Contents** (beginning on a new page)

5. **List of Tables** (beginning on a new page)
6. **List of Figures** (beginning on a new page).

This should be followed by the main body of the thesis:

7. **Introduction and Background** (beginning on page 1 - sequential Arabic numerals hereafter), outlining research purpose, objectives, questions and/or hypotheses addressed, in the context of relevant literature)
8. **Methods**
9. **Results**
10. **Discussion**
11. **References**
12. **Appendices** (if necessary)

Text should be **Times New Roman, size 12 font and double-spaced**. Figure legends, tables and references may be single-spaced; references should then be separated by a blank line. **Margins** should be 1 inch (2.5 cm) at the top, bottom and right-hand edges of the page, and 1.5 inches (3.8 cm) at the left. **Figures** should be placed on separate pages in the text after each is first cited. The figure legend may be printed below the figure on the same page (this page would be numbered sequentially with the text), or the legend may be placed on the preceding page facing the figure (in this case, the page with the legend receives a number but the page with the figure does not). **Tables** should likewise be interleaved and paginated in sequence with the text after they are first cited.

References:

For the purposes of your proposal (and later for your progress and final reports) you will need to cite appropriate literature. The method for citing references in the text of theses is generally the name and date method, e.g., (Author, 2006), (Author and Author, 2006) or (Author et al., 2006) when there are three or more authors. When multiple references are used for a given point, place them in chronological order, separated by semi-colons. Papers are then listed in alphabetical order (according to the first author's surname) at the end of the paper in the reference section.

Basic style is as follows, but be sure to discuss with your advisor if you should consult a particular Journal or Style Guide for your area of study:

- *Book*: Author AB, Author CD. 2004. *Title of Book*. Publisher, City, ST, Country.
- *Book Article*: Author AB, Author CD. 2004. Title of article. In Adams AB, Smith DC, eds, *Title of Book*, 2nd ed, Vol 1-Toxicology. Publisher, City, ST, Country, pp 1-5.
- *Journal Article*: Author AB, Author CD. 2004. Title of article. *Environ Toxicol*

Chem 16:2200- 2204.

- *Proceedings*: Author AB, Author CD. 2004. Title of article. *Proceedings*, Name of Conference, City, ST, Country, date (month, days, year), pp 00-00 (if no page numbers are available, cite parenthetically in the text).

- *Report*: Author AB. 2004. Title of report. EPA 600/334/778. Final/Technical Report. U.S. Environmental Protection Agency, Washington, DC.

- *Thesis*: Author AB. 2004. Title of thesis. University, City, ST, Country.

8. GUIDELINES FOR THE ORAL PRESENTATIONS:

The following guidelines refer specifically to the three oral presentations in the Honours Project course. The goal of these presentations is to summarize your research plans or results prior to discussion and to provide visual aids to assist in that discussion. A Powerpoint or similar media should be used in all cases. The presentation should be concise and no more than 10 minutes in duration for the research proposal and progress report, and no more than 15 minutes in duration for the final presentation.

SCHEDULE A

Academic Supports

Writing and Learning Support: The Academic Learning Centre (ALC) offers services that may be helpful to you throughout your academic program. Through the ALC, you can meet with a learning specialist to discuss concerns such as time management, learning strategies, and test-taking strategies. The ALC also offers peer supported study groups called Supplemental Instruction (SI) for certain courses that students have typically found difficult. In these study groups, students have opportunities to ask questions, compare notes, discuss content, solve practice problems, and develop new study strategies in a group-learning format.

You can also meet one-to-one with a writing tutor who can give you feedback at any stage of the writing process, whether you are just beginning to work on a written assignment or already have a draft. If you are interested in meeting with a writing tutor, reserve your appointment two to three days in advance of the time you would like to meet. Also, plan to meet with a writing tutor a few days before your paper is due so that you have time to work with the tutor's feedback.

These Academic Learning Centre services are free for U of M students. For more information, please visit the Academic Learning Centre website at: <http://umanitoba.ca/student/academiclearning/>

You can also contact the Academic Learning Centre by calling 204-480-1481 or by visiting 201 Tier Building.

University of Manitoba Libraries (UML) - As the primary contact for all research needs, your liaison librarian (if they weren't recently fired by Central Administration) can play a vital role when completing academic papers and assignments. Liaisons can answer questions about managing citations, or locating appropriate resources, and will address any other concerns you may have, regarding the research process. Liaisons can be contacted by email or phone, and are also available to meet with you in-person. A complete list of liaison librarians can be found by subject: <http://bit.ly/WcEbA1> or name: <http://bit.ly/1U0bB4>.

In addition, general library assistance is provided in person at 19 University Libraries, located on both the Fort Garry and Bannatyne campuses, as well as in many Winnipeg hospitals. For a listing of all libraries, please consult the following: <http://bit.ly/1sXe6RA>. When working remotely, students can also receive help online, via the Ask-a-Librarian chat found on the Libraries' homepage: www.umanitoba.ca/libraries

Mental Health

- **For 24/7 mental health support, contact the Mobile Crisis Service at 204-940-1781.**
- **Student Counseling Centre:** Contact SCC if you are concerned about any aspect of your mental health, including anxiety, stress, or depression, or for help with relationships or other life concerns. SCC offers crisis services as well as individual, couple, and group counselling. <http://umanitoba.ca/student/counselling/>; 474 University Centre; S207 Medical Services; (204) 474-8592
- **Student Support Case Management:** Contact the Student Support Case Management team if you are concerned about yourself or another student and don't know where to turn. SSCM helps connect students with on and off campus resources, provides safety planning, and offers other supports, including consultation, educational workshops, and referral to the STATIS threat assessment team. <http://umanitoba.ca/student/case-manager/index.html>; 520 University Centre; (204) 474-7423
- **University Health Service:** Contact UHS for any medical concerns, including mental health problems. UHS offers a full range of medical services to students, including psychiatric consultation. <http://umanitoba.ca/student/health/>; 104 University Centre, Fort Garry Campus; (204) 474-8411 (Business hours or after hours/urgent calls)
- **Health and Wellness:** Contact our Health and Wellness Educator if you are interested in information on a broad range of health topics, including physical and mental health concerns, alcohol and substance use harms, and sexual assault. <http://umanitoba.ca/student/health-wellness/welcome.html>; 469 University Centre; (204) 295-9032
- **Live Well @ UofM:** For comprehensive information about the full range of health and wellness resources available on campus, visit the Live Well @ UofM site: <http://umanitoba.ca/student/livewell/index.html>

Copyright Information - All students are required to respect copyright as per Canada's *Copyright Act*. Staff and students play a key role in the University's copyright compliance as we balance user rights for educational purposes with the rights of content creators from around the world. The Copyright Office provides copyright resources and support for all members of the University of Manitoba community. For more information: <http://umanitoba.ca/copyright>

Rights and Responsibilities

- **Your rights and responsibilities:** As a student of the University of Manitoba you have rights and responsibilities. It is important for you to know what you can expect from the University as a student and to understand what the University expects from you. Become familiar with the policies and procedures of the University and the regulations that are specific to your faculty, college or school.
- The [Academic Calendar](http://umanitoba.ca/student/records/academiccalendar.html) <http://umanitoba.ca/student/records/academiccalendar.html> is one important source of information. View the sections *University Policies and Procedures* and *General Academic Regulations*.
- While all of the information contained in these two sections is important, the following information is highlighted.
- If you have questions about your grades, talk to your instructor. There is a process for term work and final **grade appeals**.

- Note that you have the right to access your final examination scripts. See the Registrar's Office website for more information including appeal deadline dates and the appeal form: <http://umanitoba.ca/registrar/>
- You are expected to view the General Academic Regulation section within the Academic Calendar and specifically read the **Academic Integrity** regulation. Consult the course syllabus or ask your instructor for additional information about demonstrating academic integrity in your academic work. Visit the Academic Integrity Site for tools and support <http://umanitoba.ca/academicintegrity/> View the **Student Academic Misconduct** procedure for more information.
 - The University is committed to a respectful work and learning environment. You have the right to be treated with respect and you are expected to conduct yourself in an appropriate respectful manner. Policies governing behavior are included in the next section.

Policies and Services Information

- **Respectful Work and Learning Environment:** http://umanitoba.ca/admin/governance/governing_documents/community/230.html
- **Student Discipline** http://umanitoba.ca/admin/governance/governing_documents/students/student_discipline.html and,
- **Violent or Threatening Behaviour** http://umanitoba.ca/admin/governance/governing_documents/community/669.html
 - If you experience **Sexual Assault** or know a member of the University community who has, it is important to know there is a policy that provides information about the supports available to those who disclose and outlines a process for reporting. The **Sexual Assault** policy may be found at: http://umanitoba.ca/admin/governance/governing_documents/community/230.html More information and resources can be found by reviewing the Sexual Assault site <http://umanitoba.ca/student/sexual-assault/>

Intellectual Property - For information about rights and responsibilities regarding **Intellectual Property** view the policy: http://umanitoba.ca/admin/governance/media/Intellectual_Property_Policy_-_2013_10_01.pdf