



University of Manitoba
Faculty of Environment, Earth, and Resources
Department of Environment and Geography

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COURSE DETAILS

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|--|--|
| Course Title & Number: | ENVR2270 Environmental Problem Solving and Scientific Thinking |
| Number of Credit Hours: | 3 |
| Class Times & Days of Week: | Wednesday, 2:30pm to 5:15pm |
| Location for class: | 218 Wallace Building |
| Pre-Requisites: | ENVR1000 or permission of instructor |

Instructor Contact Information

| | |
|--------------------------------------|---|
| Instructor Name: | Dr. Mark Hanson |
| Preferred Form of Address: | Mark |
| Office Location: | 252 Wallace |
| Office Hours or Availability: | 9:00 – 11:00 a.m. Wednesday, or preferably by appointment. |
| Office Phone No. | (204)-474-9897 |
| Email: | mark.hanson@umanitoba.ca |
| Contact: | Best to contact by email. Typically, responses will be made within 48hrs. |

Course Description

A course to help students develop skeptical and scientific thinking around environmental issues and problems. A multi-disciplinary approach will be taken, using current topical issues as examples.

General Course Information

This course is designed to aid students in the development of a skeptical, scientific approach to thinking about environmental problems and issues. Too often, students do not question or evaluate what they are told; either in class or the media, or the personal beliefs they hold, whether social or scientific. This class will attempt to engage students to think critically about what they are taught, and use a rationale, science-based reasoning to evaluate claims that have either implicitly or explicitly scientific underpinnings. Students are encouraged to question the instructor and each other, while remembering that the key to a successful discussion is always grounded in a respect and courtesy for those whose beliefs you are attempting to sway.

In class, discussions will revolve around our understanding and views on environmentally relevant issues, and possibly debunking many closely held sacred cows, especially within the academic arena. For example, how many people in Canada die each year from pesticides in their food? Or from eating genetically modified crops? Is organic farming a viable choice for feeding the world? Why does 'natural' reassure and 'synthetic' scare the Dickens out of us? Where does our energy future lie? We will investigate these types of questions from a Manitoba and Canadian perspective and extrapolating to the global community.

The hope is that students will come to realize that there are no easy answers, that every decision comes with a cost, and that anyone that has a pat solution, is selling you a bill of goods.

Course Goals

1. To recognize our own cognitive bias and limitations when dealing with complex environmental issues.
2. To engage critically with the scientific literature in all aspects of environmental problem solving.

Using Copyrighted Material

Example: Please respect copyright. We will use copyrighted content in this course. I have ensured that the content I use is appropriately acknowledged and is copied in accordance with copyright laws and University guidelines. Copyrighted works, including those created by me, are made available for private study and research and must not be distributed in any format without permission. Do not upload copyrighted works to a learning management system (such as UM Learn), or any website, unless an exception to the *Copyright Act* applies or written permission has been confirmed. For more information, see the University's Copyright Office website at <http://umanitoba.ca/copyright/> or contact um_copyright@umanitoba.ca.

Recording Class Lectures

Dr. Hanson and the University of Manitoba hold copyright over the course materials, presentations and lectures which form part of this course. No audio or video recording of lectures or presentations is allowed in any format, openly or surreptitiously, in whole or in part. Course materials (both paper and digital) are for the participant's private study and research.

Textbook, Readings, Materials

No required texts. Readings will be assigned. All notes, assignments, and essay instructions will be posted on UM Learn or whatever they call it this year.

Course Technology

It is the general University of Manitoba policy that all technology resources are to be used in a responsible, efficient, ethical and legal manner. The student can use all technology in classroom setting only for educational purposes approved by instructor and/or the University of Manitoba Disability Services. Student should not participate in personal direct electronic messaging / posting activities (e-mail, texting, video or voice chat, wikis, blogs, social networking (e.g. Facebook) online and offline "gaming" during scheduled class time. If student is on call (emergency) the student should switch his/her cell phone on vibrate mode and leave the classroom before using it. (©S Kondrashov. Used with permission)

Class Communication

The University requires all students to activate an official University email account. For full details of the Electronic Communication with Students please visit:
http://umanitoba.ca/admin/governance/media/Electronic_Communication_with_Students_Policy_-_2014_06_05.pdf

Please note that all communication between myself and you as a student must comply with the electronic communication with student policy

(http://umanitoba.ca/admin/governance/governing_documents/community/electronic_communication_with_students_policy.html). You are required to obtain and use your U of M email account for all communication between yourself and the university.

Expectations: I Expect

- A high level of student cooperation and participation.
- Students are required to attend all lectures and take notes. If you miss a lecture, make arrangements to get notes from a fellow student, not from instructor.
- Students are required to complete the necessary assignments and exam **individually**.

Academic Integrity:

Academic dishonesty (plagiarism, cheating) is a very serious matter in an academic institution and is dealt with severely at the University of Manitoba. Commonly, the penalty for any form of cheating is a grade of F on the assignment and a final grade of F in the course. Students should acquaint themselves with the University's policy on plagiarism and cheating and examination impersonation (see University of Manitoba General Calendar). The copying of another student's assignment (or an instructor's answer sheet from a previous year) or the submission of the same material for two or more courses is plagiarism. Plagiarism and other forms of cheating are prohibited. The full definition of plagiarism and the possible penalties associated with it are outlined in the General Calendar. If your submitted assignment contains material you have copied from another source (e.g., from a textbook, web page, or from the published literature) you must give proper credit to that source.

Students Accessibility Services

Student Accessibility Services

If you are a student with a disability, please contact SAS for academic accommodation supports and services such as note-taking, interpreting, assistive technology and exam accommodations. Students who have, or think they may have, a disability (e.g. mental illness, learning, medical, hearing, injury-related, visual) are invited to contact SAS to arrange a confidential consultation.

Student Accessibility Services <http://umanitoba.ca/student/saa/accessibility/>

520 University Centre

204 474 7423

Student_accessibility@umanitoba.ca

Expectations: You Can Expect Me To

Help guide you through the material to the best of my ability.

Class Schedule

This schedule is subject to change at the discretion of the instructor and/or based on the learning needs of the students but such changes are subject to Section 2.8 of the – [ROASS-Procedure](#)).

| Date | Instructor | Subject | Evaluations Due |
|------------------------------|------------|---|----------------------|
| Sept. 14 th | Hanson | Thinking like a skeptic. | |
| Sept. 21 st | Hanson | How science works, and when it doesn't. | |
| Sept. 28th | Hanson | Grasping risk. PS You will die. | Essay topic selected |
| Oct. 5th | Hanson | Logically fallacies. | Assignment 1 due |
| Oct. 12 th | Hanson | What doesn't give you cancer? | |
| Oct. 19th | Hanson | Evaluating the experts. | Essay outline due |
| Oct. 26th | Hanson | How SCAMs hurt the environment. | Assignment 2 due |
| Nov. 2 nd | Hanson | The politics of science. | |
| Nov. 9 th | Guest | Curing TBD | |
| Nov. 16th | Hanson | The future of agriculture is tomorrow. | Assignment 3 due |
| Nov. 23rd | Hanson | So where are we headed? | Exam released |
| Nov. 30th | | Student presentations | Essays due |
| Dec 7th | | Student presentations | |

Course Evaluation Methods

For due dates, see schedule above.

ASSESSMENT TOOL

Assignments
 Essay outline
 Essay
 Presentation
 Take home exam
Total

VALUE TO FINAL GRADE

30% (3 assignments worth 10% each)
 5%
 25%
 10%
 30%
100%

Grading

Indicate your grading scale. A sample is given below that you can adjust to your course expectations.

| Letter Grade | Percentage out of 100 | Grade Point Range | Final Grade Point |
|--------------|-----------------------|-------------------|-------------------|
| A+ | 90-100 | 4.25-4.5 | 4.5 |
| A | 80-89 | 3.75-4.24 | 4.0 |
| B+ | 75-79 | 3.25-3.74 | 3.5 |
| B | 70-74 | 2.75-3.24 | 3.0 |
| C+ | 65-69 | 2.25-2.74 | 2.5 |
| C | 60-64 | 2.0-2.24 | 2.0 |
| D | 50-59 | Less than 2.0 | 1.0 |
| F | Less than 50 | | 0 |

Referencing Style

Referencing style will be provided with each assignment. Please follow the prescribed styles.

Assignment Descriptions

Assignments will be provided at least two weeks prior to their due date and will contain detailed descriptions and guidance around completion and instructor expectations.

Assignment Grading Times

Assignments will be graded and returned within two weeks of submission.

Assignment Extension and Late Submission Policy

Students will be required to complete three assignments throughout the semester, each worth 10% of their final grade. Assignments must be handed in on time, i.e., 2:30 pm on the due date. **A penalty of 10% per day** will be given to late assignments unless the student has obtained instructor approval in advance of the deadline.