

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

ENVR 2270 Environmental Problem Solving and Scientific Thinking (3 Credit hours, W)
Term 1, 2015-2016

Instructor: Mark Hanson, Ph.D.
Office: 252 Wallace Building
Phone: 474-9897
E-mail: mark.hanson@umanitoba.ca
Office Hours: 9:00 – 11:00 a.m. Wednesday, or preferably by appointment.

DESCRIPTION

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.

LECTURES

2:30-5:15 p.m. Wednesdays, 217 Wallace Building

TEXT

No required texts. Readings will be assigned.

PREREQUISITES

Minimum Grade of "C" in the following: CHEM 1310 or CHEM 1311 (or 002.131), and BIOL 1030 (or 071.103) or BIOL 1031 or the former 071.125.

Grading Scheme:

Assignments	30% (3 assignments worth 10% each)
Essay outline	5%
Essay	25%
Presentation	10%
Take home exam	30%
Total	100%

Letter Grade Percentage

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

ASSIGNMENTS

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.

TESTING

You will have at least one week from handout date to complete the take home exam. **A mark of zero will be given to any exam that is handed in late.**

UM LEARN

All notes, assignments, and essay instructions will be posted on UM Learn or whatever they call it this year.

STUDENT RESPONSIBILITIES

- 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**.

COURSE POLICIES

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.

Questions/Concerns: If you are having a problem and want to discuss something, please feel free to see me before/after class, during my office hours or make an appointment at a more convenient time. I can be reached at my office number or through email.

Voluntary Withdrawal Date: The voluntary withdrawal date is the last date for withdrawing from this course without academic penalty. The voluntary withdrawal date for this course is November 18th, 2015. Evaluative feedback will be provided prior to this date.

Schedule and order of material to be covered (dates and material may change):

Date	Instructor	Lecture Material	Assignments
Sept. 16 th	Hanson	Thinking like a skeptic.	
Sept. 23 rd	Hanson	How science works, and when it doesn't.	
Sept. 30th	Hanson	Grasping risk. PS You will die.	Select essay topic
Oct. 7th	Guest	Finding a cure for TBD	Assignment 1 due
Oct. 14th	Hanson	Logically fallacies.	Essay outline due
Oct. 21 st	Hanson	What doesn't give you cancer?	
Oct. 28th	Hanson	How SCAMs hurt the environment.	Assignment 2 due
Nov. 4 th	Guest	The politics of science.	
<i>Nov. 11th</i>		<i>Remembrance Day</i>	
Nov. 18th	Hanson	The future of agriculture is tomorrow.	Assignment 3 due
Nov. 25th	Hanson	So where are we headed?	Exam Released
Dec. 2nd	Hanson	Student presentations	Essays due
Dec 9th	Hanson	Student presentations	

The voluntary withdrawal deadline date for this course is November 18th, 2015.