

NTSC 3301: Environmental Health

3 credits, 3 hours lecture per week

Course description: Humans routinely interact with a variety of environmental hazards that may negatively affect our health that include chemicals, electromagnetic radiation and infectious agents. Many of these potential hazards are the result of human activities and are the subject of much discussion and controversy for both their effects on human health and the consequences to the environment. This course will examine a variety of these issues and explore how we can think critically about them.

Prerequisite: BIOL 107 or CHEM 164/261 or permission of the department

Instructor

Dr. Blaine Legaree

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Office Hours

Mondays 1:00 – 2:00 pm

Tuesdays 12:00 – 2:00 pm

Wednesdays 10:00 – 11:00 am

Fridays 10:00 – 11:00 am

Hours of Instruction

Tues/Thurs 10:30 – 11:50 am Rm S214

Required Resources

There is no required textbook for this course. Supplemental readings, notes and other resources will be supplied through the course Moodle site as required (<http://learn.keyano.ca>).

University Wide Learning Outcomes

Through all learning experiences, and continuing at successively higher levels across their university studies, Mount Royal University aims to provide students with the following:

- **Intellectual and practical skills** practiced extensively, across the curriculum, in the context of progressively more challenging problems, projects, and standards for performance
- **Integrative and applied learning** demonstrated through the application of knowledge, skills and responsibilities to new settings and complex problems
- **Knowledge of human cultures and the physical, natural and technological world** focused by engagement with relevant questions
- **Personal and social responsibility** anchored through active involvement with diverse communities and real-world challenges

Course Outcomes

Upon successful completion of this course, the student will be able to:

- Discuss the complexity of a variety of environmental health issues and problems.
- Describe some potential solutions to current environmental health issues and problems.
- Demonstrate the ability to research and think scientifically about environmental health issues.
- Demonstrate a deeper understanding of one particular environmental health issue through a class presentation and term project.

Evaluation

Presentations and Assignments	25%	Will be detailed in class
Term Project	30%	Due March 29, 2018
Midterm	20%	March 1, 2018
Final Examination	25%	<i>Date to be set by the Registrar</i>

A grade of C- is required for progression or transfer.

Presentations and Assignments:

Depending on the number enrolled in the class, students will be required to give 1 or 2 oral presentation (5% each) on self-selected topics during class times, as well as one comprehensive final presentation on your Term Project (10%). Class assignments may include book reports, case studies, reading assignments or literature reviews. Assignments will be detailed in class.

Term Projects

The term project specifics will be handed out in the second week of classes.

Examinations

For examination purposes, students will be responsible for all lecture and supplemental materials, whether or not they are included in the assigned readings or whether or not the material was explicitly covered in lecture. Any and all information presented by other students during their presentations will be considered as examinable. As much as 50% of the final exam questions may be drawn from these student project presentations.

Grading System

Descriptor	Alpha Grade	4.0 Scale	Percent	Rubric for Letter Grades
Excellent	A+	4.0	> 92.9	Work shows in-depth and critical analysis, well developed ideas, creativity, excellent writing, clarity and proper format.
	A	4.0	85 – 92.9	
	A-	3.7	80 – 84.9	
Good	B+	3.3	77 – 79.9	Work is generally of high quality, well developed, well written, has clarity, and uses proper format.
	B	3.0	74 – 76.9	
	B-	2.7	70 – 73.9	
Satisfactory Progression	C+	2.3	67 – 69.9	Work has some developed ideas but needs more attention to clarity, style and formatting.
	C	2.0	64 – 66.9	
	C-	1.7	60 – 63.9	
Poor	D+	1.3	55 – 59.9	Work is completed in a general way with minimal support, or is poorly written or did not use proper format.
Minimum Pass	D	1.0	50 – 54.9	
Failure	F	0.0	< 50	Responses fail to demonstrate appropriate understanding or are fundamentally incomplete.

Topic List (Tentative)

This course is designed to discuss a variety of relevant and current environmental health issues. Additionally, every person will have unique perspectives on what is relevant. Every student is **strongly encouraged** to explore **NEW, CONTROVERSIAL**, and **PERSONALLY RELEVANT** topics that will be both interesting to learn about and suitable for stimulating in class discussions. The pace of the course and the details of the materials covered will be governed to some extent by the interest, level of preparation of the students, and current environmental events. Therefore the topics discussed will differ with each course offering. The following are some of the topics that may be covered:

- A hydrogen society: can we shift from our dependency upon fossil fuels to hydrogen?
- Agriculture and manufacturing of foods: organic vs 'inorganic' gardening
- Air Quality: internal and external environments. pollution, smog, and particulate materials
- Allergies: are humans getting less resistant to environmental triggers, or are there just more triggers?
- Alternative Therapies and Naturopathic treatments: environmental saviors or not?
- Are we creating the Superbug, or is this a normal part of bacterial evolution?
- Batteries: new ways to store energy, but what about the Lithium?
- Biological and Chemical Weapons >>Around Here? Awareness about their presence in society
- Cancers: are environmental factors really leading to increased cancer development?
- Cell phone usage and mental health
- Children's Health and environmental hazards
- Chlorine: The Miracle Cure Debate
- Climate Change: even the deniers are realizing it is real....so now what?
- Deforestation in Canada and human health issues
- Electric and magnetic fields (EMFs): Basic Forces of the Known Universe that surround us
- Electrical Generation: Hydroelectric, nuclear, coal, and alternatives

- Fracking... are the environmental and health risks real or fictitious?
- Genetically modified organism and their place in the food web.
- Household cleaning products: what happens when you combine them?
- Hyper-consumerism and its role in developing environmental disasters
- Indoor fragrances and air fresheners
- Infertility: are males becoming less fertile do to environmental factors?
- International food distribution: effects on 'nutrient cycles;?
- Light pollution and human health: visual problems and the effects on the Pineal gland
- Microbiology: modifying prokaryotes to suit our needs
- Mine tailings: just a natural material from the Earth, so what is the big deal?
- Monsanto: Our saviour, or our executioner?
- Nanotechnology and human health technologies
- Noise Pollution: effects on the vestibule-cochlear apparatus and auditory sensory input
- Nuclear medicine: MRI vs CT vs PET scans...are they worth the risks?
- Pesticides and herbicides: can we support our populations without these chemicals?
- Plastics in our environment
- POPs: Persistent Organic Pollutants and bioaccumulation
- Processing and reuse of human sewage
- Recycling: is this really reducing the stress on our environmental and risks to human health?
- Respiratory system, health effects of environmental tobacco smoke: adults and children
- Risk Analysis: can statistical estimates accurately predict our safety?
- The generic Pharmaceutical Industry: off shore manufacturing and quality assurance
- The Supplement Industry: human digestive system and 'health foods'
- Tourism: are vacations becoming a stressor on our environment and our health?
- Toxic Waste Handling: from Chernobyl to the Tar Sands...what do we do with the waste?
- War... localized human conflicts or global environmental health concerns?
- Water: so necessary for all life, yet so easy to abuse.
- Forest Fires...What hazards are present after the Fort McMurray fire?
- Water fluoridation... to fluoridate or not.

Performance Requirements

Student Responsibilities

It is your responsibility as a student to contact the Office of the Registrar to complete the forms for Withdrawal or Change of Registration, and any other forms. Please refer to the list of important dates as noted in the Academic Schedule in the Keyano College credit calendar.

More specific details are found in the Student Rights and Student Code of Conduct section of the Keyano College credit calendar. It is the responsibility of each student to be aware of the guidelines outlined in the Student Rights and Student Code of Conduct Policies.

Student Attendance

Class attendance is useful for two reasons. First, class attendance maximizes a student's learning experience. Second, attending class is a good way to keep informed of matters relating to the administration of the course (e.g., the timing of assignments and exams). Ultimately, you are responsible for your own learning and performance in this course.

It is the responsibility of each student to be prepared for all classes. Students who miss classes are responsible for the material covered in those classes and for ensuring that they are prepared for the next class, including the completion of any assignments and / or notes that may be due.

Academic Misconduct

Students are considered to be responsible adults and should adhere to principles of intellectual integrity. Intellectual dishonesty may take many forms, such as:

- Plagiarism or the submission of another person's work as one's own
- The use of unauthorized aids in assignments or examinations (cheating)
- Collusion or the unauthorized collaboration with others in preparing work
- The deliberate misrepresentation of qualifications
- The willful distortion of results or data
- Substitution in an examination by another person
- Handing in the same unchanged work as submitted for another assignment
- Breach of confidentiality.

The consequences for academic misconduct range from a verbal reprimand to expulsion from the College. More specific descriptions and details are found in the Student Rights and Student Code of Conduct section of the Keyano College credit calendar. It is the responsibility of each student to be aware of the guidelines outlined in the Student Rights and Student Code of Conduct Policies.

In order to ensure your understanding of the concept of plagiarism, you must successfully complete the online Plagiarism Certificate at ilearn.keyano.ca. Then print the certificate, sign it, and show it to each of your instructors. Your course work will not be graded until you show this signed certificate. If you completed this certification previously, show evidence to your instructor.

Specialized Supports**Counselling and Accessibility Services**

Counselling Services provides a wide range of specialized counselling services to prospective and registered students, including personal, career and academic counselling.

SKILL Centre

The SKILL Centre is a learning space at Keyano College where students can gather to share ideas, collaborate on projects and get new perspectives on learning from our tutorial staff.

The SKILL Centre, through a variety of delivery methods, provides assistance in skill development to Keyano students. Assistance is provided by instructors, staff and student tutors. Individuals wishing to improve their mathematics, writing, grammar, study, or other skills, can take advantage of this unique service.