

GEOG 3432B-Environmental Hazards and Human Health Winter 2019 Course Outline

Instructor: Dr. Fatih Sekercioglu
Email: msekerci@uwo.ca

Office: SSC 2223
Lectures: Wednesday 2:30 – 4:30 Room: SSC 3014
Tutorials: Thursday 10:30 – 11:30 Room: SSC 3006
Thursday 11:30 – 12:30 Room: SSC 3014

Office Hours: Wednesday 1:30 – 2:30, or by appointment

TA: Killian Atuoye
Oluwatomilola (Tomi) Ladele

Office: TBA

Email: katuoye@uwo.ca
oladele@uwo.ca

Office Hours: TBA

Course Description

This is a survey course regarding the links between human health and environmental hazard exposure. Issues will include the health impacts of water pollution, air pollution, solid and hazardous waste, toxic substances, pesticides and radiation. The limitations of models and methods are discussed.

Two lecture hours, one tutorial hour

Prerequisite(s): None, however both GEO 3250 and GEO 2152 are considered an asset.

Prerequisite checking is the student's responsibility

Senate Regulations

Senate Regulations state, “unless you have either the requisites for this course or written special permission from your Dean to enroll in it, you will be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites.”

Textbook and Lecture Reading Materials

Eyles, J. and Baxter, J. (2017). *Environments, Risks, and Health Social Perspectives*. London; New York: Routledge

February 6th: A Primer on Scientific Risk Assessment at Health Canada:

https://www.cpa.ca/cpsite/UserFiles/Documents/science_and_research/2010scientific_risk_assessment_EN.pdf

February 13th: The United States Environmental Protection Agency Risk Assessment:

<https://www.epa.gov/risk>

March 6th: Environmental Burden of Cancer in Ontario:

https://www.publichealthontario.ca/en/eRepository/Environmental_Burden_of_Cancer_in_Ontario_2016.pdf

March 27th: Ontario Climate Change Toolkit:

http://www.health.gov.on.ca/en/common/ministry/publications/reports/climate_change_toolkit/climate_change_toolkit.pdf

Course Objectives and Format

Understanding the links between human health and environmental hazard exposure. In class lecture and tutorial.

Learning Outcomes

Describe the complex relationships between environmental hazards and human health

Critically analyze, compare, and contrast environment, health, and hazards research

Enhance group work and presentations skills

Demonstrate concise writing and science communication skills

Assess your peers' writing and presentation. Provide constructive feedback to your colleagues

Evaluation

Component	Weight	Due Date
Participation (tutorial and lecture)	10%	
Group presentation and essay	30%	See Lecture Schedule
Midterm Exam	20%	February 27 th
Case Study Reflections (2 submissions)	10%	See Tutorial Schedule
Final Exam	30%	During Final Exam Period

Students are responsible for material covered in the lectures as well as the assigned chapters/sections in the text. You must complete all course components to pass the course. No electronic devices - e.g., phones, calculators are allowed at the midterm or exam.

Group Presentation and Essay: Selections of the groups (maximum five students) and topics will be finalized by January 16th. Essays should be no longer than 3,000 words excluding references and appendices.

Assignments will be explained in greater detail in class. There will be a 10% per day late penalty for assignments submitted after the due date. There are no make-up opportunities for peer-review activities.

Exams: The midterm exam will cover material from January 9th to February 13th. The final exam will be primarily weighted toward material covered in the second half of the semester. Both lecture and tutorial material will be included in the exams.

Case Study Reflections: Each student will be required to submit two 250 word reflections on case studies examined in tutorial. Students will be required to summarize the prudent causes and impacts of each environmental hazard examined and then reflect on how these cases relate to broader themes examined in the course, how we can mitigate the impacts of these hazards, or how we can act to prevent contaminants/exposure instances from increasing. Additional relevant discussion points probing critical thinking will be provided during tutorial. Imagine you are communicating to an educated, but non-specific audience. You may reference tutorial or lecture materials; however, no additional references are required.

Students will be evaluated on two reflections (5% final grade weighting each). However, note that there are six tutorial case studies. Students may choose which case studies are of most interest to them and therefore which they would like to reflect on. Students must have been present in tutorial to receive credit for a submitted case-study reflection. Reflections are due at 5 pm the Friday after the respective tutorial. Reflections will be submitted online using the OWL course website.

Further, if students are dissatisfied with their grade on one of their two reflections, they may submit a third reflection (based on a different case study) to replace one of their grades.

For Western's Policy on Accommodation for Medical Illness and a downloadable SMC please refer to the [Academic Handbook](#).

Students seeking academic accommodation on medical grounds for any missed tests, exams, participation components and/or assignments worth 10% or more of their final grade must apply to the Academic Counselling office of their home Faculty and provide documentation. Academic accommodation cannot be granted by the instructor or department.

Grades will not be adjusted on the basis of need. It is important to monitor your performance in the course. Remember: *You* are responsible for your grades in this course

Lecture Schedule

Lecture Date	Lecture topic	Required reading
January 9	Scope of course; Syllabus clarifications and additions	None
January 16	Risk Management and Key Concepts	Eyles and Baxter Ch. 2 & 4
January 23	Health & Environmental Equity and Policy	Eyles and Baxter Ch. 8
January 30	Evaluating Environmental Risks to Health (Guest Speaker)	Eyles and Baxter Ch. 9

February 6	Scientific Risk Assessment at Health Canada	A Primer on Scientific Risk Assessment at Health Canada (online)
February 13	EPA Risk Assessment	The United States Environmental Protection Agency Risk Assessment (online)
February 27	Midterm Exam (in-class)	None
March 6	Environmental Burden of Cancer in Ontario	Environmental Burden of Cancer in Ontario, Public Health Ontario (online)
March 13	Group Presentations (1, 2, 3, 4)	None
March 20	Group Presentations (5, 6, 7, 8)	None
March 27	Group Presentations (9, 10)	Ontario Climate Change Toolkit (online)
April 3	Climate Change, Hazards and Human Health I Climate Change, Hazards and Human Health II/Looking Ahead	Eyles and Baxter Ch. 10/Ontario Climate Change Toolkit (online)
TBD	Final Exam	

Group Presentation Topics (Five students per group)

1. Source Water Protection
2. Environmental hazards in homes
3. Hydraulic Fracking
4. Waste Management
5. Air Pollution
6. Noise Pollution
7. Water pollution (recreational)
8. Environmental hazards in offices/buildings
9. Electromagnetic Fields/Radioactivity
10. Flood

Tutorial Schedule

Tutorial Date	Topic	Reading
January 10	No tutorial	None
January 17	Introduction, Group presentation and Essay assistance	None
January 24	Group Presentation and essay assistance	None
January 31	Case Study: Water Contamination by Pathogens	Hrudey et al. (2003), Parr (2005)
February 7	Case Study: Agricultural BMPs, Nutrients and Water Quality	Pearce and Yates, 2017; Holmes et al. 2016
February 14	Mid-term preparation	None
February 28	Case Study: Built Environment and Health	Renalds et al. (2010); Seliske et al. (2009)
March 7	Case Study: Nuclear Waste Storage	Stefanelli et al. 2017; Bickerstaff, 2012
March 14	Case Study: Air pollutants in London, ON and cardiorespiratory effects of air pollution in Ontario	Stieb et al. 2017; Oiamo et al. 2012
March 21	Case Study: Climate Change and Human Health	Hajat (2017)
March 29	Final Exam preparation	None
April 5	Final exam preparation	None

Tutorial Reading List

Bickerstaff, K. 2012. "Because we've got history here": Nuclear waste, cooperative siting, and the relational geography of a complex issue. *Environment and Planning A* 44: 2611-2628.

Hajat, S. (2017). Health effects of milder winters: A review of evidence from the United Kingdom. *Environmental Health: A Global Access Science Source*, 16(Suppl 1), 109. doi:10.1186/s12940-017-0323-

Holmes, R., Armanini, D. G., and Yates, A. (2016). Effects of best management practices on ecological condition: Does location matter? *Environmental Management*, 57(5): 1062-1076.

Hrudey, S. E., Huck, P. M., Payment, P., Gillham, R. W., & Hrudey, E. J. (2002). Walkerton: Lessons learned in comparison with waterborne outbreaks in the developed world. *Journal of Environmental Engineering and Science*, 1(6), 397-407.

Oiamo, T. H., Luginaah, I. N., Buzzelli, M., Tang, K., Xu, X., Brook, J. R., and Johnson, M. (2012). Assessing the spatial distribution of nitrogen dioxide in London, Ontario. *Journal of Air and Waste Management Association*, 62(11): 1335-1345.

Parr, J. (2005). Local water diversely known: Walkerton ontario, 2000 and after. *Environment and Planning D: Society and Space*, 23(2), 251-271. doi:10.1068/d431

Pearce, N. J. T., & Yates, A. G. (2017). Intra-annual variation of the association between agricultural best management practices and stream nutrient concentrations. *Science of the Total Environment*, 586, 1124-1134.

Renalds, A., Smith, T. H., & Hale, P. J. (2010). A systematic review of built environment and health. *Family & Community Health*, 33(1), 68-78. doi:10.1097/FCH.0b013e3181c4e2e5

Seliske, L. M., Pickett, W., Boyce, W. F., & Janssen, I. (2009). Association between the food retail environment surrounding schools and overweight in Canadian youth. *Public Health Nutrition*, 12(9), 1384-1391

Stefanelli, A., Seidl, R., Siegrist, M. (2017). The discursive politics of nuclear waste: Rethinking participatory approaches and public perceptions over nuclear waste storage repositories in Switzerland. *Energy Research and Social Science*, 34: 72-81.

Stieb, D. M., Shutt, R., Kauri, L., Mason, S., Chen, L. Szyszkowicz, M. ... Luginaah, I. (2017).

Cardiorespiratory effects of air pollution in a panel study of outdoor physical activity and health in rural older adults. *Journal of Occupational and Environmental Medicine*, 59(4), 365-364.

Make-up Examinations

Makeups will be granted with approved documentation only. All documentation for missed exams must be provided the Academic Counselling Office and Instructor within 48 hours of the scheduled exam. For missed exams, you must take your documentation to Academic Counselling

within 48 hours of the exam. Otherwise, the instructor will assign a grade of zero. The format and content of make-ups may differ substantially from the scheduled test or examination.

Use of Electronic Devices

No electronic devices will be allowed during tests and examinations.

Academic Offences

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence.

All required papers may be subject to submission for textual similarity review to the commercial plagiarism detection software under license to the University for the detection of plagiarism. All papers submitted for such checking will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between The University of Western Ontario and Turnitin.com (<http://www.turnitin.com>).

Computer-marked multiple-choice tests and/or exams may be subject to submission for similarity review by software that will check for unusual coincidences in answer patterns that may indicate cheating.

Western's Commitment to Accessibility

The Department of Geography strives at all times to provide accessibility to all faculty, staff, students and visitors in a way that respects the dignity and independence of people with disabilities.

Please contact the course instructor if you require material in an alternate format or if you require any other arrangements to make this course more accessible to you. You may also wish to contact Services for Students with Disabilities (SSD) at 519-661-2147 for any specific question regarding an accommodation. Information regarding accommodation of exams is available on the Registrar's website.

More information about "Accessibility at Western" is available.

Medical Issues

The University recognizes that a student's ability to meet his/her academic responsibilities may, on occasion, be impaired by medical illness. The Student Services website provides greater detail about the University's policy on medical accommodation. This site provides links the necessary forms. In the event of illness, you should contact Academic Counselling as soon as possible. The Academic Counsellors will determine, in consultation with the student, whether or not accommodation should be requested. They will subsequently contact the instructors in the relevant courses about the accommodation. Once the instructor has made a decision about whether to grant an accommodation, the student should contact his/her instructors to determine a new due date for tests, assignments, and exams.

Students must see the Academic Counsellor and submit all required documentation in order to be approved for certain accommodation.

Mental Health

If you or someone you know is experiencing distress, there are several resources here at Western to assist you. Please visit Western's [Health and Wellness website](#) for more information on mental health resources.

Support Services

[Student Support Services](#)

[Student Development Services](#)

Important Dates

January 7: Classes resume

January 15: Last day to add a second term half course

February 18: Family Day – Department Office Closed

February 18 to 22: Spring Reading Week (No classes; Department Office open)

March 7: Last day to drop a second term half course without penalty

April 9: Classes end

April 10: Study day

April 11-30: Examination Period