

GEOG*1220- Explaining Environmental Change

Image: Guelph Lake. Source: Wikimedia.

PROVISIONAL

Winter 2027
Department of Geography,
Environment and Geomatics |
University of Guelph



Course Description

This course introduces foundational concepts for understanding human-environment relationships. Our goal is to recognize how the world's most pressing environmental problems - climate change, biodiversity loss, water pollution, and so on - have their roots in societal structures and processes. We will achieve this by integrating perspectives from both earth system and social sciences.

The course is best described as two-fold. Each week we will learn key concepts - including earth system cycles and feedbacks as well as environmental governance and justice - that help us think about human-environment relationships. Each week we will also apply these concepts by exploring a range of case studies of environmental change, with a focus on food, energy, and water systems. Throughout the course, we will contrast issues and governance approaches from around the world, but with emphasis on Canadian and US contexts.

Key People

Instructor	Dr. Eric Nost	enost@uoguelph.ca	Hutt 344	Office Hours TBD
Teaching Assistants	TBD			

Learning Outcomes

By the end of this course, you will be able to:

1. Identify human impacts on the environment across a variety of earth systems and scales
2. Define and discuss concepts from earth system sciences that characterize environmental change from a biophysical perspective (e.g. feedback loops, open/closed systems, nutrient cycles)
3. Define and discuss the social scientific concepts that drive human impacts on the environment (e.g. institutional failures, market failures, uneven development, environmental racism) and different ways governments, companies, and civil society actors govern environmental change.
4. Investigate and evaluate diverse sources of knowledge about real-world, place-based environmental issues



5. Explain specific environmental changes using key earth system and social science concepts

Materials

There is no required textbook for this course. Instead, we will ask you to read short chapter, peer-reviewed academic papers, and "[grey literature](#)" such as reports, just as any professional researcher would. These weekly readings will be made available through the Library's Ares system, which you can access on our CourseLink page.



Schedule

WEEK OF	#	TOPIC	READINGS
	1	Earth System Sciences	Turner's <i>The Anthropocene</i> Section 1 – Question 3: What is the Earth System? Section 1 – Question 4: What are Biogeochemical Cycles?
	2	The Anthropocene	Turner's <i>The Anthropocene</i> Section 1 – Question 1: What is the Anthropocene? Question 2: Is the Anthropocene a Geological Time Unit?
	3	Population	Turner's <i>The Anthropocene</i> Section VII – Question 63: Does an increasing population alter environments? Cummins, E. 2020. The Dark Search for a "Silver Lining" to the Coronavirus. <i>The New Republic</i> .
	4	Institutions	Berkes, F., D. Feeny, B. Mccay, and Acheson, J. 1989. The Benefits of the Commons. <i>Nature</i> , 340, 91–93. Food and Agriculture Organization's The State of World Fisheries and Aquaculture 2022 — Read "Key Messages" and "Part 1"
	5	Ethics and Values	Turner's <i>The Anthropocene</i> Section VII – Chapter 68: Do cultural values and norms shape environmental behaviour? Section VI – Chapter 55: Is human activity creating a new mass extinction? Secretariat of the Convention on Biological Diversity. (2020). Global Biodiversity Outlook 5: Summary for Policy Makers. Montréal.
	6	Technology	Adams, W. 2026. Digital surveillance of animals and nature recovery. <i>People and Nature</i> .



			Library resources on finding, evaluating research
7	Risks	Turner's <i>The Anthropocene</i> . Section VIII – Chapter 72: Do views about human–environment relationships cross-cut cultures and social groups?	
8	Markets	Robbins et al. <i>Environment and Society</i> . Chapter 3 - Markets	
9	Political Economy	Turner's <i>The Anthropocene</i> Section VII – Chapter 67: Are some economies and political economies more environmentally degrading than others? Section IV – Chapter 33: What are water withdrawal, water consumption and water footprint, and their implications for water availability? Section IV – Chapter 35: Has human activity degraded groundwater and aquifer stocks globally?	
10	Settler Colonialism	Liboiron, M. 2018. How Plastic is a Function of Colonialism. <i>Teen Vogue</i> .	
11	Environmental Justice	Waldron, I. 2020. Environmental Racism in Canada. The Canadian Commission for UNESCO's IdeaLab.	
12	Exam Review		
	Comprehensive Exam		



Evaluation

You will receive more detailed instructions for these assignments in follow-up documents posted to Courselink.

Assignment	Description	Weight	Learning Outcomes
Quizzes	<p>Each Monday, you will take one short quiz on the week's reading(s) and one short quiz each Friday on the material covered in lectures. They will help you check your understanding of the course material and prepare for the comprehensive exam. Your two lowest weekly quiz scores will be dropped.</p> <p>Each quiz is designed to assess and measure the knowledge you gain from studying the course material. They will test your ability to define elements of each week's key concepts and to identify them in real-world examples. You are not expected to memorize and recall specific, obscure numbers. Instead, you'll be asked questions about trends, from distinct choices; as long as you generally remember the relative magnitude of something, you'll be able to select the right response.</p> <p>Each quiz contains a mixture of ~10 multiple-choice, matching, and true/false questions. You have one attempt and 10 minutes to complete each quiz on Courselink.</p>	20%	1,2,3
Comprehensive Exam	<p>The exam is designed to assess and measure the knowledge you gain from the entire course. It will test your ability to define the course's key concepts and to identify them in real-world examples. Like the quizzes, you will not be expected to memorize and recall specific, obscure numbers.</p> <p>The exam contains a mixture of ~100 multiple-choice, matching, and true/false questions. You have one attempt and two hours to complete it. It will be taken in-person.</p>	30%	1,2,3
Exercises	<p>You will complete five short exercises to demonstrate your ability to discuss key concepts, use them to explain specific place-based environmental changes, and to investigate and evaluate sources of information about such changes.</p> <ul style="list-style-type: none"><input type="checkbox"/> Cycles/flows: Week 3<input type="checkbox"/> Institutions: Week 5<input type="checkbox"/> Finding and evaluating sources: Week 7<input type="checkbox"/> Solutions: Week 9	50%	2,3,4,5



Assignment	Description	Weight	Learning Outcomes
	<input type="checkbox"/> Explaining environmental change: Week 12		

Late Work

All work must be submitted on time to the relevant section of Courselink. Unless other arrangements are made ahead of time, late work will be penalized at the rate of 10% per day, and will not be accepted (i.e., will receive a grade of 0) after five days. Students whose work is late because of a valid medical reason, family emergency, or other acceptable reason will not be penalized. We are only able to make accommodations if we are aware of your situation, so please keep the lines of communication open as early and often as possible.

AI Policy

Emerging research shows the use of artificial intelligence (GenAI) tools can [diminish](#) important student learning outcomes. GenAI use is permitted for coursework only in the following circumstances, and only with major caveats (user beware – what the chatbot tells you may not be accurate or relevant to the course):

- alternative explanations of concepts (e.g. if you learn best when everything is framed in terms of sports analogies - “a positive feedback loop is like when you score on a power play, the other team gets demoralized and then they are more likely to make further penalties, and so on...”)
- suggesting spelling, grammar, or other minor stylistic changes to writing

Examples of prohibited uses:

- uploading course content to chatbots without permission
- asking AI to summarize readings or slides
- asking AI to complete any part of any assignment

Asking for Help!



- Check here! (the course outline)
- Ask me (Prof Nost) on Courselink Discussion Boards - your peers may benefit from clarification
- Check the “Get Assistance” link from the Library: <http://www.lib.uoguelph.ca/get-assistance>
- Attend your TA’s office hours
- Attend my office hours
- If you are concerned about any aspect of your academic program: make an appointment with a program counsellor in your degree program.
- If you are struggling to succeed academically: There are numerous academic resources offered by the Learning Commons including, Supported Learning Groups for a variety of courses, workshops related to time management, taking multiple choice exams, and general study skills. You can also set up individualized appointments with a learning specialist.
- If you are struggling with personal or health issues:
 - Counselling services offers individualized appointments to help students work through personal struggles that may be impacting their academic performance.
 - Student Health Services is located on campus and is available to provide medical attention.
 - For support related to stress and anxiety, besides Health Services and Counselling Services, Kathy Somers runs training workshops and one-on-one sessions related to stress management and high performance situations.
- If you have a documented disability or think you may have a disability:
 - Student Accessibility Services SAS can provide services and support for students with a documented learning or physical disability. They can also provide information about how



to be tested for a learning disability. For more information, including how to register with the centre please see the [SAS website](#).

A brief Q&A

Q: How do I contact you?

A: See the flow chart above. The Courselink Discussion Board is best for general inquiries. Please check there first to see if someone else has already asked your question. I will check the Discussion often during weekdays until 6pm, and occasionally in the evenings and weekends. I will respond to your requests and questions as soon as I can. Please do not count on an immediate response, especially for important last minute questions regarding assignments.

Q: I'm confused about the material--what should I do?

A: First off, don't feel embarrassed—few scholars, whether undergraduates or tenured professors - understand everything completely the first time! Please bring your questions to class! If you are confused, it's likely that your classmates are, too. If you bring me questions, it helps me evaluate how best to help you learn the material. If you are still confused, please come to my office hours. I am glad to help!

Q: I have to miss lecture, the exam, an assignment deadline, etc. for a family/personal/medical emergency. What should I do?

A: For the exam or assignments, please get in touch using the Courselink extension request form as soon as possible.

Q: I'm not happy about my exam/lab grade. Will you change it?

A: For a regrade, wait 24 hours, then email a written description of why you deserve a better grade to: your TA (assignments) or me (quizzes). For regrades, we reserve the right to either increase OR decrease your grade depending on what we find in regrading.

What you can expect from me

- To help you not only understand but get excited about the material, learning as much as possible! We're all coming from different perspectives and starting points, meaning that it is everyone's responsibility, but especially mine, to work to provide a respectful and engaging learning environment. I'm here to work with you from where you are and build up your understanding of the course content.
- To provide prompt feedback on assignments.
- To give you a sense of the flow of the semester – when the assignment load will be heavier, so that you can prepare appropriately.
- To assist in developing your critical analysis and communication skills, through our assignments. These are skills that will be useful to you in both your chosen profession and as a citizen.
- To advise you on future coursework, jobs, grad school, and/or volunteering opportunities.

What I expect of you

- To treat each other with respect. Our classroom is a safe space for all students, regardless of sex, gender, race, ethnicity, religion, age, sexual orientation, political orientation, nationality, ability or disability. Every person is welcome here.



- To communicate with me about what you expect from the course, what you need, and your challenges.
- To put your best possible effort into this class.



University of Guelph Policy Statements

When You Cannot Meet a Course Requirement

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons, please advise the course instructor (or designated person, such as a teaching assistant) in writing, with your name, id#, and e-mail contact. See the undergraduate calendar for information on regulations and procedures for Academic Consideration.

Accessibility

The University of Guelph is committed to creating a barrier-free environment. Providing services for students is a shared responsibility among students, faculty and administrators. This relationship is based on respect of individual rights, the dignity of the individual and the University community's shared commitment to an open and supportive learning environment. Students requiring service or accommodation, whether due to an identified, ongoing disability or a short-term disability should contact Student Accessibility Services (SAS) as soon as possible. For more information, contact SAS at 519-824-4120 ext. 56208 or visit the [SAS website](#).

Academic Misconduct

The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community – faculty, staff, and students – to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection.

Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

The Academic Misconduct Policy is detailed in the Undergraduate Calendar.

E-mail Communication

As per university regulations, all students are required to check their <uoguelph.ca> e-mail account regularly. E-mail is the official route of communication between the University and its students.

Drop Date

Students will have until the last day of classes to drop courses without academic penalty. The deadline to drop two-semester courses will be the last day of classes in the second semester. This applies to all students (undergraduate, graduate and diploma) except for Doctor of Veterinary Medicine and Associate Diploma in Veterinary Technology (conventional and alternative delivery) students.



The regulations and procedures for course registration are available in their respective Academic Calendars.

- Undergraduate Calendar - [Dropping Courses](#)
- Graduate Calendar - [Registration Changes](#)
- Associate Diploma Calendar - [Dropping Courses](#)

Copies of out-of-class assignments

Keep paper and/or other reliable back-up copies of all out-of-class assignments: you may be asked to resubmit work at any time.

Recording of Materials

Presentations which are made in relation to course work—including lectures—cannot be recorded or copied without the permission of the presenter, whether the instructor, a classmate or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.

Resources

The Undergraduate Calendars are the source of information about the University of Guelph's procedures, policies and regulations which apply to undergraduate, graduate and diploma programs.