

## F24 GEOG 3020: Global Environmental Change

### Instructor

Karina Benessaiah

Office: HUTT Building, Room 241

Office hours: Thurs 10:15-11:15am or by  
appointment

Email: kbenessa@uoguelph.ca

### Teaching Assistants

TBD

**Schedule & class location:** Tuesdays and Thursdays 8:30am-9:50am MCLN 102

**Course website:** <https://courselink.uoguelph.ca/d2l/le/content/893595/Home>

**Prerequisites:** 7.50 credits, (GEOG\*2210 recommended)

\*\*Please note that some classes may be online; class schedule, topics and readings subject to change and will be announced on courselink and/or class email\*\*

### Land acknowledgement

*The university of Guelph, and our classroom, resides on treaty land and territory of the Mississaugas of the Credit. This is the home of many past, present and future First Nations, Inuit and Metis people. The Dish with One Spoon is an agreement between Hodinöhsö:ni', Anishinaabeg and their allied nations to live peaceably on the lands throughout what is now known as the Great Lakes Region. The circle at the centre is a dish with a beaver's tail, indicating that they will have one dish and what belongs to one will be shared among all. This land acknowledgement is a recognition of collective responsibility to hold governments and colonial forces to account, to seek redress and healing for injustice. Learn more [here](#)*

### Acknowledgements

Thank you to previous course instructors for their support

### Course Description:

This course examines the human/social dimensions of global environmental change: i.e., how we influence and how we are impacted by environmental changes that are occurring at the global scale. The course focuses on climate change but we also discuss other kinds of global environmental change: e.g., global land use changes, biodiversity loss, and their interplay with global socioeconomic processes. Emphasis of the course is on the concepts and applications that help us understand unprecedented environmental change and identify barriers and enablers to sustainable pathways.

This course is divided into three main, interrelated, sections. The first section, “What is global environmental change?” explores the scale and extent of human dimensions of global environmental change, focusing on key concepts (i.e. teleconnections, double exposure, historical legacies, trade-offs, unintended consequences, social-ecological systems) that allow us to understand how local and global processes interact. The second section, entitled, “Uneven pathways” will focus further on understanding how these global environmental changes affect particular people and places differently. Key concepts discussed in this section include multiple exposures, uneven development and vulnerability, resilience, adaptation and the need for sustainable *and* just transformations. The final section called “What to do?”, will focus on different leverage points for and approaches to governance (e.g. sustainable development goals; the doughnut approach; climate decolonization; harnessing insights from past practices), from the international to the local, to manage GEC and move towards sustainability transformations. Particular attention will be paid to issues of power, equity, differing visions and approaches in the path to resilience and sustainability.

The major course project is a small-group collaboration where the final product is to research and develop your own proposal of a sustainability seed, an innovative project that helps us achieve progress towards Sustainable Development Goals, taking into account local and global processes (inspired by a modified doughnut approach). Workshops will provide students with the support they need to execute these projects effectively.

### **Anticipated Learning Outcomes:**

1. To understand what is Global Environmental Change and its impacts on human well-being
2. To get familiar with key concepts (e.g., vulnerability, trade-offs, teleconnections, transformations) needed to understand the complex and often interrelated dimensions of Global Environmental Change
3. To develop your ability to think of global environmental change issues in terms of interconnected social AND ecological systems linking local and global processes
4. To improve research, reading and writing skills to develop critical thinking and the ability to produce evidence-based analyses
5. To hone your collaboration skills which are often essential for interdisciplinary, issue-oriented research

## Course readings & lecture slides

There is no textbook for the class. Weekly assigned readings for this course are a mix of journal articles, book chapters and reports. Sometimes short videos or podcasts will replace a reading. All the assigned readings will be available on CourseLink prior to the lectures. Students should complete the readings **before** class & insights from the readings will be part of class exams and assignments. Students will be provided with advance notice for any changes to required readings.

Note: some of the readings might be challenging, especially to students unfamiliar with the topics. It is not my expectation that you will obtain a perfect understanding of the reading, my expectation is that you will do your best to engage with the material and focus on key ideas and concepts. I will spend time in class unpacking the key concepts and contributions from the readings.

Lecture slides will be posted after the class. If you cannot make up the class, you are strongly encouraged to find someone to share notes since the slides do not convey all the information provided in class.

Table 1. <b>Class schedule (subject to change with notice)</b>			
Notes: **Schedule of lecture topics and assigned readings may change. Any such changes will be announced via CourseLink and/or class email. Students are responsible for paying careful attention and staying organized when those changes are made. Course material will be posted on courselink **			
Week	Date	Topics & Activities	Readings & Responsibilities
1	Thurs Sept 5	Introductions & course overview	----
2	Tues Sept 10	The Anthropocene	Folke, C., Polasky, S., Rockström, J. et al. Our future in the Anthropocene biosphere. <i>Ambio</i> 50, 834–869 (2021). <a href="https://doi.org/10.1007/s13280-021-01544-8">https://doi.org/10.1007/s13280-021-01544-8</a>  Read short blogspot <a href="https://www.stockholmresilience.org/research/planetary-boundaries.html">https://www.stockholmresilience.org/research/planetary-boundaries.html</a>
	Thurs Sept 12	Climate change	IPCC 2022 WII: read pages 1-33  <i>Optional:</i> Read WRI blogpost <a href="https://www.wri.org/insights/ipcc-climate-report">https://www.wri.org/insights/ipcc-climate-report</a>
3	Tues Sept 17	Who's impacted? Understanding vulnerabilities	Thomas, Kimberley, et al. 2018 "Explaining differential vulnerability to climate change: A social science review." <i>Wiley Interdisciplinary Reviews: Climate Change</i> 10.2: e565.

	Thurs Sept 19	Dealing with GEC, what to do? An intro  &  group project description	<p>Watch the presentation by Kate Raworth on Doughnut Economics <a href="https://www.unsdglearn.org/microlearning/kate-raworth-on-doughnut-economics/">https://www.unsdglearn.org/microlearning/kate-raworth-on-doughnut-economics/</a></p> <p>Read Bennett, Elena M., et al. ""Bright spots: seeds of a good Anthropocene."" <i>Frontiers in Ecology and the Environment</i> 14.8 (2016): 441-448</p> <p>Read about the 17 SDGs, <a href="https://sdgs.un.org/goals">https://sdgs.un.org/goals</a></p> <p><b>Groups will be selected this day</b></p>
4	Tues Sept 24	Double exposures & teleconnections	<p>Adger, W. Neil, Hallie Eakin, and Alexandra Winkels. 2009. "Nested and teleconnected vulnerabilities to environmental change." <i>Frontiers in Ecology and the Environment</i> 7.3: 150-157.</p> <p>Lade et al. 2020 <a href="https://www.nature.com/articles/s41893-019-0454-4">https://www.nature.com/articles/s41893-019-0454-4</a></p>
	Thurs Sept 26		<b>Guest lecturer: Shannon Thibodeau</b>
5	Tues Oct 1	Deforestation I	<p>Geist, Helmut J., and Eric F. Lambin. "Proximate Causes and Underlying Driving Forces of Tropical Deforestation Tropical forests are disappearing as the result of many pressures, both local and regional, acting in various combinations in different geographical locations." <i>BioScience</i> 52.2 (2002): 143-150.</p> <p>Robbins, P. <i>Institutions and Commons</i>. Paul Robbins, John Hintz, and Sarah A. Moore, eds, In <i>Environment &amp; Society: A Critical Introduction</i> (3rd edition), Chapter 4.</p> <p><b>Group contract due at 11:59pm uploaded on courselink</b></p>
	Thurs Oct 3	Deforestation II	<p>Readings are mostly from magazine articles (shorter and less dense than academic articles) – which means that they are <u>shorter reads</u>.</p> <p>Thomson, J. The World's Last Rainforests Are Under Threat. <i>The Walrus</i> Feb, 2020 <a href="https://thewalrus.ca/the-worlds-last-rainforest-is-under-threat/">https://thewalrus.ca/the-worlds-last-rainforest-is-under-threat/</a></p> <p>Wood, S. How Clayoquot Sound's War in the Woods transformed a region, <i>The Narwal</i> Sept 2021 <a href="https://thenarwhal.ca/clayoquot-sound-tofino-after-war-woods/">https://thenarwhal.ca/clayoquot-sound-tofino-after-war-woods/</a></p> <p>Pierce, D. 25 Years after the War in the Woods: Why B.C.'s forests are still in crisis. <i>The Narwal</i>, May 2018 <a href="https://thenarwhal.ca/25-years-after-clayoquot-sound-blockades-the-war-in-the-woods-never-ended-and-its-heating-back-up/">https://thenarwhal.ca/25-years-after-clayoquot-sound-blockades-the-war-in-the-woods-never-ended-and-its-heating-back-up/</a></p> <p>Gaworecki, M. The inside story of how Great Bear Rainforest</p>

			<p>went from a 'War In The Woods' to an unprecedented environmental and human rights agreement. Mongabay news February 2016. <a href="https://news.mongabay.com/2016/02/the-inside-story-of-how-great-bear-rainforest-went-from-a-war-in-the-woods-to-an-unprecedented-environmental-and-human-rights-agreement/">https://news.mongabay.com/2016/02/the-inside-story-of-how-great-bear-rainforest-went-from-a-war-in-the-woods-to-an-unprecedented-environmental-and-human-rights-agreement/</a></p> <p><b>Group assignment part 1 due on, uploaded on courselink at 11:59pm</b></p>
6	Tues Oct 8	<b>In-class test 1</b>	<i>Covers all in-class and assigned reading and other material to date</i>
	Thurs Oct 10	Biogeochemical flows - Phosphorus	<p><b>Guest lecture Gen Metson</b></p> <p>Readings TBD</p>
7	Tues Oct 15	Fall break	<b>No classes</b>
	Thurs Oct 17	Resilience, adaptation, transformation	<p>Pelling, Mark. <i>Adaptation to climate change: from resilience to transformation</i>. Routledge, 2010.[book chapter]</p> <p>Pathways approach: Wise, Russell M., et al. "Reconceptualising adaptation to climate change as part of pathways of change and response." <i>Global environmental change</i> 28 (2014): 325-336.</p> <p><b>Guest lecture - Jacquie Hamilton</b></p>
8	Tues Oct 22	How to transform?	<p>Abson, David J., et al. "Leverage points for sustainability transformation." <i>Ambio</i> 46.1 (2017): 30-39.</p> <p>O'Brien, Karen, and Linda Sygna. "Responding to climate change: the three spheres of transformation." <i>Proceedings of transformation in a changing climate</i> 16 (2013): 23.</p> <p><b>Part 2 of group assignment due by 11:59pm (courselink upload)</b></p>
	Thurs Oct 24	Digital storytelling & knowledge dissemination	<p>Have a spooky Halloween!</p> <p>Workshop on Scripting and making your video (tentative)</p> <p>Readings TBD</p>
9	Tues Oct 29	<b>In-class test 2</b>	In-class test 2: Mix of multiple choice & short questions
	Thurs Oct 31	Changing values and ways of thinking	Moore, Michele-Lee, and Manjana Milkoreit. "Imagination and transformations to sustainable and just futures." <i>Elementa: Science of the Anthropocene</i> 8.1 (2020).
10	Tues Nov 5	Changing the other spheres of transformation: the practical and	Brundiers, Katja, and Hallie C. Eakin. "Leveraging post-disaster windows of opportunities for change towards sustainability: A framework." <i>Sustainability</i> 10.5 (2018): 1390.

		political spheres	
	Thurs Nov 7	Actors for transformations I	Hinton, J. B. (2020). Fit for purpose? Clarifying the critical role of profit for sustainability. <i>Journal of political ecology</i> , 27(1), 236-262.
11	Tues Nov 12	Actors for transformations II	Temper, Leah, Federico Demaria, Arnim Scheidel, Daniela Del Bene, and Joan Martinez-Alier. "The Global Environmental Justice Atlas (EJAtlas): ecological distribution conflicts as forces for sustainability." <i>Sustainability Science</i> 13, no. 3 (2018): 573-584.  <b>Part 3 of group assignment by 11:59pm (courselink upload)</b>
	Thurs Nov 14	Group work presentations	Presentations of students' projects & class discussion
12	Tues Nov 19	Group work presentations	Presentations of students' projects & class discussion
	Thurs Nov 21	Group work presentations	Presentations of students' projects & class discussion
13	Tues Nov 26	Future scenarios: pathways to where	Play the game SurviveTheCentury  Reading TBD  <b>Peer-review of another group's project due by 11:59pm (courselink upload)</b>  <b>Take-home exam revealed</b>
	Thurs Nov 28	Study time	<b>Self-assessment due by 11:59pm (courselink upload)</b>
	Dec 3 <sup>rd</sup>		<b>Take-home exam due on December 3 (submitted by 11:59pm, courselink upload)</b>

## Course Assignments (See schedule above, subject to change)

**In-class tests** [2 x 14%] = **28%**. There are two in-class tests that cover reading and in-class material. The tests will each feature multiple choice and short answer/fill in the blank. Please refer to the class schedule for dates and information. Students must attend the tests in-person.

### **Group contract for group project = 4%**

Each group will have to develop their own group contract to outline their expectations and timeline for their group work.

**Major course project** [3 parts, 10%, 15% and 12% respectively] = **37%**

A collaborative group project where the final product is a short report and video based on your own research. Time will be devoted to explaining the project, and instructions will be uploaded through Courselink.

The group project will be divided in three parts. In the first part, you will be tasked with brainstorming and developing an initial idea of a sustainability initiative that you would set up to address a global environmental change issue. You will need to research other existing sustainability initiatives (2 pages). In the second part, your group will need to explain succinctly what are the existing social and ecological issues that your sustainability initiative is addressing, linkages between local and global and what would be needed for the idea to scale up further. This assessment will need to provide evidence-based arguments to support the analysis (6 pages). In part 3, the group will need to create a short (max 3min) video presentation of their report, explaining what is their proposed sustainability idea, how it will contribute to progress towards SDGs locally and globally and how it may further scale up. The presentation must clearly and succinctly articulates take-home messages from the report for your core audience. More details will follow in an assignment summary sheet posted on CourseLink.

\*Please note at my discretion an adjustment may be applied to a student's grade for the group work. Students who fail to fulfil their commitments to the group will lose points, those whose contribution is outstanding (above and beyond the call of duty) will have points added. This will be determined through the self-assessment process and through evidence (or lack thereof) of engagement. Students who do not participate in the group work or otherwise fail to contribute may receive a grade of zero.

### **Peer-review of group project = 8%**

Each group will have to write a constructive peer-review of another group's final product: what works, what doesn't work and why.

### **Self-evaluation: 8%**

Your experience and learning in this course, and its collective success, will depend on everyone keeping up with readings, attending classes and being a good team member through the duration of the course project.

How it works: You will complete and upload a self-assessment end of November. The self-assessment will be uploaded end of September to give you the time to reflect on it. You may download the full self-assessment template from Courselink at your leisure; however, I advise that you consult it early in the semester and that you track the number of meetings your group has, how many you attend, and the and quality/quantity of your group contributions. As part of the assessment you will answer a few short answers and assign yourself and your groupmates a grade out of 10. The self-assessments must be completed and sent to Prof. Benessaiah by the due date (see class schedule; failure to submit will mean an automatic zero). Prof. Benessaiah with the help of the TAs will personally review each self-assessment and follow-up with individuals if there are any major questions or discrepancies between their in-class observations through the semester and the self-assigned grade.

**Take-home examination = 15%**

The final exam will feature two or three questions; each are to be answered in 500 words. We will discuss final exam question topics in the last month of the semester and the exam questions and more specific instructions will be revealed on November 28th. Doing required readings and attending lectures/taking notes will give students the necessary knowledge base from which to develop accurate and well-supported answers on the take-home exam. Please see class schedule for take-home due date.

**NOTE:** Keep back-up copies of all out-of-class assignments: you may be asked to resubmit work at any time.

Final grades will be classified as follows:

Grade	%	Grade	%	Grade	%	Grade	%	Grade	%
A+	90-100	B+	77-79	C+	67-69	D+	57-59	F	0-49
A	85-89	B	73-76	C	63-66	D	53-56		
A-	80-84	B-	70-72	C-	60-62	D-	50-52		

**Instructor Policy Statements**

**Note Taking:** Students are responsible for taking their own notes during lectures. Materials, such as power point slides, provided on course link are incomplete and are not intended to replace student notes and class attendance. I will not provide lecture recordings for missed lectures. Please coordinate with other students if you need notes for missed classes – a discussion board will be available on Courselink to facilitate student communication.

**Academic Integrity:** Students are expected to undertake this course with honesty and integrity, and to understand what plagiarism is and how to avoid it. Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. If you have uncertainty about how to avoid plagiarism in your writing, please refer to the Academic Calendar, the university-produced tutorial (<https://academicintegrity.uoguelph.ca/plagiarism>) and/or see the course TA, a university librarian, or the instructor. Plagiarism and other types of misconduct will not be tolerated, and any instances will be treated seriously.

**Communication:** For general course questions, please post your question on “General course questions” in the discussion section in courselink so that other students can also learn from your question. For other questions or issues, email your instructor or TA.

The instructor and TAs will do their best to respond to emails within 1-3 business days. Emails sent after work hours will be answered the next day. Emails sent after 3pm on



Friday will not be responded to until at least the following Monday, and questions with answers that can be found in course documents will receive short replies (e.g., “please see course syllabus”). Students must be respectful and use professional language when emailing the instructor or TAs.

Please check your university email account and the 'news' section of our Courselink page once every 1-2 business days. Any important information arising throughout the semester will be communicated by these means and the university mandates that students must check them.

**Project submission, grading and grade reviews, and monitoring your courselink gradebook:** It is the student’s responsibility to ensure that they are clear on when, where, and in what format projects are due, to track when in-class activities will occur, and in the case of assessments submitted via courselink, to double-check that the upload has worked successfully and that your uploaded files are not corrupt. When the instructor or TA encounters a corrupt or incorrect file during grading, they will contact the student and offer a chance to re-send; however, late deductions from the original due date will apply (see late policy section).

It is the student’s responsibility to check their courselink class gradebook to ensure that all grades are entered and accurate. If any concerns arise with regards to grades or grading, the student must immediately visit instructor office hours or request an appointment. Requests to review or revisit grades must be made within a week after they are released in the gradebook; thereafter, it is likely that the instructor will deny requests and that the grade will stand as final.

**Late Policy:** If you choose to submit your assignments late, the full allocated mark will be reduced by 10% for every 24 hours (including Saturday and Sundays) after the deadline for the submission of the assignment to a limit of five days. After five days the assignment will get a zero.

Extensions will be considered for medical reasons or other extenuating circumstances. If you require an extension, discuss this with the instructor (or TA) as soon as possible and well before the due date. Barring exceptional circumstances, extensions will not be granted once the due date has passed. A note and/or other documentation may be required. I may require evidence of completed work to date for the assignment attached. Late assignments will not be accepted once graded assignments have been returned officially to the class at large unless circumstances permit and alternative arrangements have been made. These rules are not designed to be arbitrary, nor are they inflexible. They are designed to keep you organized, to ensure that all students have the same amount of time to work on assignments, and to help to return marked materials to you in the shortest possible time

## University 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.

Using artificial intelligence tools (AI tools) such as ChatGPT or similar tools that generate text, code, or visual images) for content generation and submitting it as one's own original work is not permitted in this course.

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 outlined in the Undergraduate Calendar.

**Drop Date.** The last date to drop one-semester courses is November 29<sup>th</sup>, 2024.

**Copies of out-of-class assignments.** Keep 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.

**Covid-19:** The risk of contracting COVID has not disappeared. It may be fair to say that we are in a different phase and/or that the risks for many people, especially fully vaccinated individuals, have lessened. However, risks - of (re)infection and of negative long-term health outcomes - remain for all of us. For people with frequent or intense patterns of exposure (e.g., staff in or frequent visitor to healthcare settings) and/or certain types of home, care-giving or other family circumstances and/or those who are immunocompromised or unable to receive the vaccine, the risk of (re)infection and negative health outcomes remains high. See for recommendations on how to maintain a healthy campus <https://news.uoguelph.ca/covid-19/>. If you feel sick, let the instructor/TA know in advance about your situation and consider whether you should be staying home.