Faculty of Arts and Sciences - School of Environment

ENV194H1 S

Topics in Climate Change: Confronting the Climate Crisis

Winter 2024 Syllabus

Course Meetings

ENV194H1 S

Section	Day & Time	Delivery Mode & Location
LEC0101	Wednesday, 10:00 AM - 12:00 PM	In Person: ES

Refer to ACORN for the most up-to-date information about the location of the course meetings.

Course Contacts

Course Website: https://q.utoronto.ca/courses/331088

Instructor: Prof Steve Easterbrook
Email: sme@cs.toronto.edu
Office Hours and Location:
Thursdays 11am.

Contact me if you prefer to meet via Zoom.
Additional Notes:
Email is the best way to contact me. Make sure to use your mail.utoronto.ca email account. Please include the course code in the subject of your email and allow 24-48 hours for a response during normal office hours.

Course Overview

In this class we will discuss the underlying science of the climate system and also explore how this information is communicated effectively.

This course is a comprehensive, interdisciplinary introduction to the climate crisis, suitable for any undergraduate student at U of T. The course examines the climate crisis from scientific, social, economic, political, and cultural perspectives, from the physical science basis through to the choices we now face to stabilize the climate system. The course uses a mixture of lectures, hands-on activities, group projects, online discussion, and guest speakers to give students a deeper understanding of climate change as a complex, interconnected set of problems, while equipping them with a framework to evaluate the choices we face as a society, and to cultivate a culture of hope in the face of a challenging future.

Restricted to first-year students. Not eligible for CR/NCR option.

Course Learning Outcomes

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

- Identify key drivers and impacts of climate change and assess scale and urgency of the crisis;
- Interpret scientific reports and graphical presentation of data used in climate research and policymaking;
- Identify systemic interconnections between scientific, political, economic, social, and ethical dimensions of climate change and climate solutions;
- Identify and critique diverse responses to the climate crisis from the orthodox to the radical, and link them to underlying economic, political, and cultural worldviews;
- Engage in productive dialogue, debate, and collaborative learning to critically re-assess their own positions, values, assumptions, thought patterns, and behaviours in relation to the climate crisis;
- Apply the principles of active hope to cultivate constructive responses and resilient behaviours, including self-care and community engagement;

Prerequisites: None
Corequisites: None
Exclusions: None
Recommended Preparation: None
Credit Value: 0.5

Course Materials

There are no set textbooks for this course. Weekly readings will be provided via Quercus.

Marking Scheme

Assessment	Weight	Details	Due Date
Participation in Class	10%	Full participation marks will be awarded if you submit an introductory video at the start of the course and participate in class discussions in at least ten of the twelve weekly seminars.	No Specific Date
Personal Journal	10%	Keep a journal of your thoughts and feelings about the climate crisis throughout the course. To encourage you to be frank and honest in describing your feelings, your journal will remain private - you will not be asked to submit it for grading. However, each week, you should bring one thought or reflection from your journal to share at the beginning of class.	No Specific Date

Assessment	Weight	Details	Due Date
Reading Reflections	10%	Hand in a half page reflection on the week's assigned readings at the start of class each week (except for weeks 1 & 12). Any format will do: handwritten, bullet points, whatever. Try to focus on your own reaction to the readings, rather than attempting to summarize them.	In class each week (weeks 2-11)
A1: Policy Brief	20%	Write a two-page policy brief for a politician on a climate policy issue of your choice. Succinctly cover the key points an elected official might need to know before going into a vote in the legislature on the policy. Bring a draft of your briefing to class in week 5 for a peer review session. Final version due in class in week 6.	2024-02-07
A2: Climate Solution Presentation	25%	Working in a team of 3-4 students, you will research a potential climate solution (e.g. a technology, a policy idea, a behavioural change, etc). Identify pros and cons and assess how much of a contribution it could make if adopted broadly. Present the results of your research in a six-minute talk to the rest of the class (sign up for presentation times for week 7 or 8).	2024-02-28
A3: Final Project	25%	Working in a team of 3-4 students, develop a creative work on the theme of storytelling and constructive hope. You have broad freedom to choose what to create: e.g. artwork, video, music, prose, poetry, performance, protest, etc. Your project is due in the final week of term.	2024-04-03

Late Assessment Submissions Policy

Late penalty: Half marks if submitted after the deadline, but within one week. Zero after that. *Individual extensions will be granted automatically without penalty if requested in advance of the deadline.*

Course Schedule

Week	Description
Week 1 Jan 10	**How long have we known?** • Course intro and brief overview of the history of climate science *Submit your intro video on flip:* flip.com/e5d417e5
Week 2 Jan 17	**What causes climate change?** • Greenhouse gases – where they come from and what they do • Sources of data about climate change • How scientists use models to assess climate sensitivity
Week 3 Jan 24	**How bad is it?** • Future projections of climate change • Understanding targets: 350ppm, 1.5°C & 2°C; Net Zero • Irreversibility, overshoot, long-term implications, and emergency measures (geoengineering)
Week 4 Jan 31	**Who does it affect?** • Key impacts: extreme weather, sea level rise, ocean acidification, ecosystem collapse, etc • Regional disparities in climate impacts and adaptation, and the rise of climate migrants • Inequities in responsibility and impacts – the role of climate justice. *Guest Speaker: Leah Thomas*
Week 5 Feb 7	**Do we have the technology to fix it?** • Decarbonization pathways • Sectoral analysis: energy, buildings, transport, food systems, waste, etc • Interaction effects among climate solutions *Bring the draft of your policy brief to class for peer review*
Week 6 Feb 14	**Can we agree to fix it?** • International policymaking: UNFCC, IPCC, Kyoto, Paris, etc. • Policy tools: carbon taxes, carbon trading, subsidies, direct investment, etc. • Barriers to political action. *Final version of your policy brief due*
Feb 21	**No class - reading week!**

Week 7 Feb 28	**What will it cost to fix it?** • Intro to climate economics • Costs and benefits of adaptation and mitigation • Ecomodernism vs. Degrowth *First set of climate solutions presentations*
Week 8 Mar 6	**What's stopping us?** • Climate communication and climate disinformation • The role of political lobbying • How we talk about climate change and the role of framing *Second set of climate solutions presentations*
Week 9 Mar 13	**What are we afraid of?** • The psychology of climate change • Affective responses to climate change: ecoanxiety, doomerism, denial, etc. • Maintaining mental health in the climate crisis
Week 10 Mar 20	**How can we make our voices heard?** • Protest movements and climate activism • Theories of Change • Modes of activism and the ethics of disruptive protest
Week 11 Mar 27	**What gives us hope?** • Constructive hope as a response to eco-anxiety • The role of worldviews, culture, and language • Reconnecting with nature
Week 12 Apr 3	**Where do we go from here?** • Importance of systems thinking and multisolving. • The role of storytelling in creating a narrative of hope • Making your studies count: the role of universities in a climate emergency. *Final project due*

Policies & Statements

Late/Missed Assignments

The deadline for all submitted coursework is the start of class in the week in which the assignment is due - more specifically, within the first ten minutes of class (i.e. by 10:20am). Work submitted after this will be graded as normal, but half marks will be deducted as a late penalty.

I recognize that many of you face struggles for multiple reasons (family care, wellness, mental health, financial stress, housing, etc), all of which is compounded by multiple global crises including war, poverty, and climate change. If you're struggling with coursework, you may ask for an extension and I will always grant it, **as long as you ask before the deadline**. However, bear in mind that missed deadlines tend to compound, and catching up can be hard. I'm happy to negotiation a timeline that works for you to help you get through the course successfully.

Assignment Submission Method

All coursework should be submitted on paper during class. If you cannot attend the class when an assignment is due, you may ask another student to bring it to class for you, or submit an electronic version to me via email by the normal deadline (10:20am on the day of the class).

Students with Disabilities or Accommodation Requirements

Students with diverse learning styles and needs are welcome in this course. If you have an acute or ongoing disability issue or accommodation need, you should register with Accessibility Services (AS) at the beginning of the academic year by visiting https://studentlife.utoronto.ca/department/accessibility-services/. Without registration, you will not be able to verify your situation with your instructors, and instructors will not be advised about your accommodation needs. AS will assess your situation, develop an accommodation plan with you, and support you in requesting accommodation for your course work. Remember that the process of accommodation is private: AS will not share details of your needs or condition with any instructor, and your instructors will not reveal that you are registered with AS.

Specific Medical Circumstances

If you become ill and it affects your ability to do your academic work, consult me right away. Normally, I will ask you for documentation in support of your specific medical circumstances. This documentation can be an Absence Declaration (via ACORN) or the University's Verification of Student Illness or Injury (VOI) form. The VOI indicates the impact and severity of the illness, while protecting your privacy about the details of the nature of the illness. If you cannot submit a VOI due to limits on terms of use, you can submit a different form (like a letter from a doctor), as long as it is an original document, and it contains the same information as the VOI (including dates, academic impact, practitioner's signature, phone and registration number). For more information on the VOI, please see http://www.illnessverification.utoronto.ca. For information on Absence Declaration Tool for A&S students, please see https://www.artsci.utoronto.ca/absence. If you get a concussion, break your hand, or suffer some other acute injury, you should register with Accessibility Services as soon as possible.

Accommodation for Personal Reasons

There may be times when you are unable to complete course work on time due to non-medical reasons. If you have concerns, speak to me or to an advisor in your College Registrar's office; they can help you to decide if you want to request an extension or other forms of academic consideration. They may be able to email your instructors directly to provide a College Registrar's letter of support and connect you with other helpful resources on campus.

Religious Accommodations

As a student at the University of Toronto, you are part of a diverse community that welcomes and includes students and faculty from a wide range of cultural and religious traditions. For my part, I will make every reasonable effort to avoid scheduling tests, examinations, or other compulsory activities on religious holy days not captured by statutory holidays. Further to University Policy, if you anticipate being absent from class or missing a major course activity (such as a test or in-class assignment) due to a religious observance, please let me know as early in the course as possible, and with sufficient notice (at least two to three weeks), so that we can work together to make alternate arrangements.

Academic Integrity

All suspected cases of academic dishonesty will be investigated following procedures outlined in the Code of Behaviour on Academic Matters (https://governingcouncil.utoronto.ca/secretariat/policies/code-behaviour-academic-matters-july-1-2019). If you have questions or concerns about what constitutes appropriate academic behaviour or appropriate research and citation methods, please reach out to me. Note that you are expected to seek out additional information on academic integrity from me or from other institutional resources. For example, to learn more about how to cite and use source material appropriately and for other writing support, see the U of T writing support website at http://www.writing.utoronto.ca. Consult the Code of Behaviour on Academic Matters for a complete outline of the University's policy and expectations. For more information, please see A&S Student Academic Integrity (https://www.artsci.utoronto.ca/current/academic-advising-and-support/student-academic-integrity) and the University of Toronto Website on Academic Integrity (https://www.academicintegrity.utoronto.ca).

Quercus Info

This Course uses the University's learning management system, Quercus, to post information about the course. This includes posting readings and other materials required to complete class activities and course assignments, as well as sharing important announcements and updates. New information and resources will be posted regularly as we move through the term. To access the course website, go to the U of T Quercus log-in page at https://q.utoronto.ca. SPECIAL NOTE ABOUT GRADES POSTED ONLINE: Please also note that any grades posted are for your information only, so you can view and track your progress through the course. No grades are considered official, including any posted in Quercus at any point in the term, until they have been formally approved and posted on ACORN at the end of the course. Please contact me as soon as possible if you think there is an error in any grade posted on Quercus.

Participation + Conduct in Class

In this course, you can expect that I will strive to be fair, respectful, prepared, responsive, and enthusiastic. In return, I anticipate you will be respectful of your classmates and of me, be prepared, and be flexible. We are all learning new skills, practices, and norms in a time of crisis, and doing so amidst a series of personal, community, and global challenges. I hope that together we can foster a safe and engaging space both in the classroom and online, and I will rely on all of you to help create that environment.

Be mindful of others during class discussions and ensure everyone has a chance to speak. Some of the material in this course can evoke strong emotional reactions, and class members may have strongly held beliefs and opinions. We will need to listen to each other respectfully, but we must also be open to having our views challenged in a fair and constructive way. If at any point you feel that any speech or behaviour in the course is unacceptable, please alert me as early as possible, so that I can address it in a timely way.

Cell Phones and Laptop Usage

Technology can support student learning, but it can also become a distraction. Research indicates that multi-tasking during class time can have a negative impact on learning. Out of respect for your fellow students in this class, please refrain from using laptops or mobile phones for purposes unrelated to the class. Do not display any material on a laptop which may be distracting or offensive to your fellow students.

Mental Health and Well-being

As a student, you may experience challenges that can interfere with learning, such as strained relationships, increased anxiety, substance use, feeling down, difficulty concentrating and/or lack of motivation, financial concerns, family worries and so forth. These factors may affect your academic performance and/or reduce your ability to participate fully in daily activities. Everyone feels stressed now and then – it is a normal part of university life. Some days are better than others, and there is no wrong time to reach out. There are resources for every situation and every level of stress.

There are many helpful resources available through your College Registrar or through Student Life (http://studentlife.utoronto.ca and http://www.studentlife.utoronto.ca/feeling-distressed). An important part of the University experience is learning how and when to ask for help. Please take the time to inform yourself of available resources.

Equity, Diversity and Inclusion

The University of Toronto is committed to equity, human rights and respect for diversity. All members of the learning environment in this course should strive to create an atmosphere of mutual respect where all members of our community can express themselves, engage with each other, and respect one another's differences. U of T does not condone discrimination or harassment against any persons or communities.

Online Communication

The best way to ask me questions is during class. If you need to contact me outside of class, you can reach me via email at sme@cs.toronto.edu. Please put the course code in the subject line of your email. You must use your mail.utoronto.ca email address for all course-related communications - I will not respond to email about the course that is not from a U of T mailbox. Please also remember to check your U of T email box regularly.

Rationale for this policy: University of Toronto email accounts are more secure and are governed by the institution's codes of conduct. It also means that if you send me your assignment via email, but for some reason I don't receive it, this can be verified by IT staff if needed.

Use of generative AI

The assignments on this course have been carefully designed to give you meaningful experiences that build your knowledge and skills, and I hope you will engage with them in that spirit. If you decide to use any AI tools, you *must* include a note explaining what tools you used and how you used them, and include a reflection on how they have affected your learning process. Without such a note, use of AI tools will be treated as an academic offence, with the same penalties as if you had asked someone else (rather than a bot) to do the work for you.

Rationale for this policy: In the last couple of years, so-called Artificial Intelligence (AI) tools have become commonplace, particularly tools that use generative AI to create text and images. The underlying technology uses complex statistical models of typical sequences of words (and elements of images), which can instantly create very plausible responses to a variety of prompts. However, these tools have no understanding of the meanings that we humans attach to words and images, and no experience of the world in which those meanings reside. The result is that they are expert at mimicking how humans express themselves, but they are often factually wrong, and their outputs reflect the biases (racial, gender, socio-economic, geographic) that are inherent in the data on which the models were trained. If you choose to use AI tools to help you create your assignments for this course, you will still be responsible for any inaccuracies and biases in the generated content.

More importantly, these AI tools raise important questions about the nature of learning in higher education. Unfortunately, we have built a higher education system that places far too much emphasis on deadlines and grades, rather than on learning and reflection. In short, we have built a system that encourages students to cheat. The AI industry promotes its products as helpful tools, perhaps no different from using a calculator in math, or a word processor when writing. And there are senses in which this is true - for example if you suffer from writer's block, an AI tool can quickly generate an outline or a first draft to get you started. But the crucial factor in deciding when and how to use such tools is a question of what, exactly, you are offloading onto the machine. If a tool helps you overcome some of the tedious, low-level steps so that you can move on faster to the important learning experiences, that's great! If on the other hand, the tool does all the work for you, so you never have to think or reflect on the course material, you will gain very little from this course other than (perhaps) a good grade. In that sense, most of the ways you might use an AI tool in your coursework are no different from other forms of 'cheating': they provide a shortcut to a good grade, by skipping the learning process you would experience if you did the work yourself.