

DRAFT

GEOG 207 – Climate Change Fundamentals

Fall 2020

Online

Instructor: Dr. Christine Dow

Email: christine.dow@uwaterloo.ca

Office hours: TBD

COURSE DESCRIPTION: Climate change is one of the most profound environmental and social issues affecting communities, nations and individuals. This course is an introduction to this global challenge, including its scientific underpinnings, history, potential impacts on natural systems and human societies around the world, and two societal responses: adaptation and greenhouse gas mitigation. Opportunities to develop sustainable resilient communities, as well as Canadian climate change policy responses will be highlighted.

The goal of this course is to provide students of any discipline with the fundamentals of climate change: both biophysical and human dimensions. This course will be delivered entirely online, and will provide students with an opportunity to hone science communication skills, explore sources of scientific uncertainty, political complexities, and equity implications of this global challenge.

Climate change is a pervasive and challenging phenomenon that can be viewed through a multitude of lenses. A scientific lens, for instance, reveals altered ecosystems and climatic tipping points while the lens of ethics raises the question of the right to develop and influence the well-being of others while doing so. By carefully laying the scientific foundations, we will explore creative, positive, nuanced visions of the future that are rooted in scientific understanding of earth systems but also capture (or at least begins a conversation about) core human values, such as equity, compassion, innovation, and connection. A wider variety of actors are increasingly taking action on climate change, or bear some responsibility for doing so, giving us the opportunity to analyze coordinated, effective responses that go beyond international negotiations.

This course is intended for undergraduate students of all backgrounds (arts, social sciences, and sciences) who wish to explore the biophysical and human dimensions of climate change. The course will also help students to hone their abilities to communicate potential solutions to others.

LEARNING OUTCOMES: Through a deeply interdisciplinary approach and with an emphasis on fostering effective communication skills, successful students in this course will:

- Demonstrate understanding of key elements of the climate system, and how these elements are being altered by the human emission of greenhouse gases.
- Carefully consider the impacts of climate change on both human and natural systems.

DRAFT

- Articulate the difference between climate change adaptation and mitigation, and understand a portfolio of actions that communities can take to respond to climate change.
- Understand the key issues at play in international climate change negotiations, as well as recent Canadian policy proposals.
- Investigate futures that are fundamentally sustainable, low-carbon, and resilient to climate change impacts.

COURSE TEXTBOOK:

Required

1. Burch, S. L., & Harris, S. E. (2014). *Understanding Climate Change: Science, Policy, and Practice*. Toronto: University of Toronto Press, Scholarly Publishing Division.

For textbook ordering information, please contact the [W Store | Course Materials + Supplies](#).

For your convenience, you can compile a list of required and optional course materials through [BookLook](#) using your Quest userID and password. If you are having difficulties ordering online and wish to call the Waterloo Bookstore, their phone number is +1 519-888-4673 or toll-free at +1 866-330-7933. Please be aware that textbook orders **CANNOT** be taken over the phone.

COURSE EVALUATION:

Activities and Assignments	Weight (%)
Quizzes (top 10 out of 11)	40%
Discussion Summary Assignment	20%
Assignment 1: Climate Change Impacts and Adaptation at the Community Scale	20%
Assignment 2: Emissions and Mitigation at the Community Scale	20%

DRAFT

Module	Week	Readings and Other Assigned Material	Activities and Assignments	End/Due Date
Module 1	Week 1: Introduction	Chapter 1: Climate Change in the Public Sphere	Groups for Discussion Activities will be created by Technical Support	Check after Tuesday, September 8, 2020 at 12:01 AM
			Red Group Answers by	Thursday, September 10, 2020 at 6:00 PM
			Week 1 Discussion Activities - Red and Blue groups finish discussion by	Sunday, September 13, 2020 at 11:55 PM
	Week 2: Introduction to the Climate System	Chapter 2: Basic System Dynamics	Blue Group Answers by	Thursday, September 17, 2020 at 6:00 PM
			Week 2 Discussion Activities - Red and Blue groups finish discussion by	Sunday, September 20, 2020 at 11:55 PM
			Complete your weekly quiz (Quizzes).	Monday, September 21, 2020 at 11:55 PM
	Week 3: The Earth and Energy	Chapter 3: Climate Controls: Energy from the Sun	Red Group Answers by	Thursday, September 24, 2020 at 6:00 PM
			Week 3 Discussion Activities - Red and Blue groups finish discussion by	Sunday, September 27, 2020 at 11:55 PM
			Complete your weekly quiz (Quizzes).	Monday, September 28, 2020 at 11:55 PM

DRAFT

	Week 4: The Carbon Cycle	Chapter 5: Climate Controls: The Greenhouse Effect	Blue Group Answers by	Thursday, October 1, 2020 at 6:00 PM
			Week 4 Discussion Activities - Red and Blue groups finish discussion by	Sunday, October 4, 2020 at 11:55 PM
			Complete your weekly quiz (Quizzes).	Monday, October 5, 2020 at 11:55 PM
	Week 5: Past and Future Climate	Chapter 7: Climate Models	Red Group Answers by	Thursday, October 8, 2020 at 6:00 PM
			Week 5 Discussion Activities - Red and Blue groups finish discussion by	Monday, October 19, 2020 at 11:55 PM
			Complete your weekly quiz (Quizzes).	Monday, October 19, 2020 at 11:55 PM
READING WEEK (Saturday, October 10, 2020 to Sunday, October 18, 2020)				
Module 2	Week 6: Impacts on Natural Systems	Chapter 9: Climate Change Impacts on Natural Systems	Submit your Module 1 Discussion Summary Assignment (Weeks 1-5)	Wednesday, October 21, 2020 at 11:55 PM
			Blue Group Answers by	Thursday, October 22, 2020 at 6:00 PM
			Week 6 Discussion Activities - Red and Blue groups finish discussion by	Sunday, October 25, 2020 at 11:55 PM
			Complete your weekly quiz (Quizzes).	Monday, October 26, 2020 at 11:55 PM
		Chapter 10: Climate Change	Red Group Answers by	Thursday, October 29,

DRAFT

	Week 7: Impacts on Humans	Impacts on Human Systems		2020 at 6:00 PM
			Week 7 Discussion Activities - Red and Blue groups finish discussion by	Sunday, November 1, 2020 at 11:55 PM
			Complete your weekly quiz (Quizzes).	Monday, November 2, 2020 at 11:55 PM
Module 2	Week 8: Assessing Vulnerability	There is no chapter assigned this week.	Blue Group Answers by	Thursday, November 5, 2020 at 6:00 PM
			Week 8 Discussion Activities - Red and Blue groups finish discussion by	Sunday, November 8, 2020 at 11:55 PM
			Complete your weekly quiz (Quizzes).	Monday, November 9, 2020 at 11:55 PM
	Week 9: Adaptation	There is no chapter assigned this week.	Red Group Answers by	Thursday, November 12, 2020 at 6:00 PM
			Week 9 Discussion Activities - Red and Blue groups finish discussion by	Sunday, November 15, 2020 at 11:55 PM
			Complete your weekly quiz (Quizzes).	Monday, November 16, 2020 at 11:55 PM
Module 3	Week 10: Introduction to Mitigation	There is no chapter assigned this week.	Assignment 1: Climate Change Impacts and Adaptation at the Community Scale is due	Wednesday, November 18, 2020 at 11:55 PM
			Submit your Module 2 Discussion Summary Assignment (Weeks 6-9)	Wednesday, November 18, 2020 at 11:55 PM
			Blue Group Answers by	Thursday, November

DRAFT

				19, 2020 at 6:00 PM
			Week 10 Discussion Activities - Red and Blue groups finish discussion by	Sunday, November 22, 2020 at 11:55 PM
			Complete your weekly quiz (Quizzes).	Monday, November 23, 2020 at 11:55 PM
	Week 11: Politics, Policy and Governance	United Nations Framework Convention on Climate Change. (2015). <i>The Paris Agreement</i> . (pp. 1-18).	Red Group Answers by	Thursday, November 26, 2020 at 6:00 PM
			Week 11 Discussion Activities - Red and Blue groups finish discussion by	Sunday, November 29, 2020 at 11:55 PM
			Complete your weekly quiz (Quizzes).	Monday, November 30, 2020 at 11:55 PM
	Week 12: Sustainability Transformations: Linking Adaptation and Mitigation in Communities	Chapter 11: Understanding Climate Change: Pathways Forward	Blue Group Answers by	Thursday, December 3, 2020 at 6:00 PM
			Week 12 Discussion Activities - Red and Blue groups finish discussion by	Sunday, December 6, 2020 at 11:55 PM
			Complete your weekly quiz (Quizzes).	Monday, December 7, 2020 at 11:55 PM
			Submit your Module 3 Discussion Summary Assignment	Monday, December 7, 2020 at 11:55 PM
			Assignment 2: Emissions and Mitigation at the Community Scale is due.	Monday, December 7, 2020 at 11:55 PM

Note: The late penalty for written assignments (Discussion Summaries module 1, 2, & 3; Assignments 1 & 2) is 5% per day.

IMPORTANT: ALL TIMES EASTERN - Please see the [University Policies](#) section of your Syllabus for details

DRAFT

Accommodation Due to Illness

If your instructor has provided specific procedures for you to follow if you miss assignment due dates, term tests, or a final examination, adhere to those instructions. Otherwise:

Missed Assignments/Tests/Quizzes

Contact the instructor as soon as you realize there will be a problem, and preferably within 48 hours, but no more than 72 hours, have a medical practitioner complete a [Verification of Illness Form](#).

Email a scanned copy of the Verification of Illness Form to your instructor. In your email to the instructor, provide your name, student ID number, and exactly what course activity you missed.

Further information regarding Management of Requests for Accommodation Due to Illness can be found on the [Accommodation due to illness](#) page.

Academic Integrity

In order to maintain a culture of academic integrity, members of the University of Waterloo community are expected to promote honesty, trust, fairness, respect, and responsibility. **If you have not already completed the online tutorial regarding academic integrity you should do so as soon as possible.** Undergraduate students should see the [Academic Integrity Tutorial](#) and graduate students should see the [Graduate Students and Academic Integrity](#) website.

Proper citations are part of academic integrity. Citations in CEL course materials usually follow CEL style, which is based on APA style. Your course may follow a different style. If you are uncertain which style to use for an assignment, please confirm with your instructor or TA.

For further information on academic integrity, please visit the [Office of Academic Integrity](#).

Turnitin

Turnitin.com: Text matching software (Turnitin®) may be used to screen assignments in this course. Turnitin® is used to verify that all materials and sources in assignments are documented. Students' submissions are stored on a U.S. server, therefore students must be given an alternative (e.g., scaffolded assignment or annotated bibliography), if they are concerned about their privacy and/or security. Students will be given due notice, in the first week of the term and/or at the time assignment details are provided, about arrangements and alternatives for the use of Turnitin® in this course.

It is the responsibility of the student to notify the instructor if they, in the first week of term or at the time assignment details are provided, wish to submit the alternate assignment.

[Turnitin® at Waterloo](#)

Discipline

A student is expected to know what constitutes [academic integrity](#) to avoid committing an academic offence, and to take responsibility for his/her actions. A student who is unsure whether an action

DRAFT

constitutes an offence, or who needs help in learning how to avoid offences (e.g., plagiarism, cheating) or about “rules” for group work/collaboration, should seek guidance from the course instructor, academic advisor, or the undergraduate Associate Dean. For information on categories of offences and types of penalties, students should refer to [Policy 71 - Student Discipline](#). For typical penalties, check [Guidelines for the Assessment of Penalties](#).

Appeals

A decision made or penalty imposed under [Policy 70 - Student Petitions and Grievances](#), (other than a petition) or [Policy 71 - Student Discipline](#), may be appealed if there is a ground. A student who believes he/she has a ground for an appeal should refer to [Policy 72 - Student Appeals](#).

Grievance

A student who believes that a decision affecting some aspect of his/her university life has been unfair or unreasonable may have grounds for initiating a grievance. Read [Policy 70 - Student Petitions and Grievances](#), Section 4. When in doubt please be certain to contact the department’s administrative assistant who will provide further assistance.

Final Grades

In accordance with [Policy 46 - Information Management](#), Appendix A - Access to and Release of Student Information, the Centre for Extended Learning does not release final examination grades or final course grades to students. Students must go to [Quest](#) to see all final grades. Any grades posted in Waterloo LEARN are unofficial.

AccessAbility Services

[AccessAbility Services](#), located in Needles Hall, collaborates with all academic departments to arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum. If you require academic accommodation to lessen the impact of your disability, please register with AccessAbility Services at the beginning of each academic term and for each course.

Accessibility Statement

The Centre for Extended Learning strives to meet the needs of all our online learners. Our ongoing efforts to become aligned with the [Accessibility for Ontarians with Disabilities Act \(AODA\)](#) are guided by University of Waterloo accessibility [Legislation](#) and policy and the [World Wide Web Consortium's \(W3C\) Web Content Accessibility Guidelines \(WCAG\) 2.0](#). The majority of our online courses are currently delivered via the Desire2Learn Learning Environment. Learn more about [Desire2Learn’s Accessibility Standards Compliance](#).

Use of Computing and Network Resources

DRAFT

Please see the [Guidelines on Use of Waterloo Computing and Network Resources](#).

Copyright Information

UWaterloo's Web Pages

All rights, including copyright, images, slides, audio, and video components, of the content of this course are owned by the course author and the University of Waterloo, unless otherwise stated. By accessing this course, you agree that you may only download the content for your own personal, non-commercial use. You are not permitted to copy, broadcast, download, store (in any medium), transmit, show or play in public, adapt, or change in any way the content of these web pages for any other purpose whatsoever without the prior written permission of the course author and the University of Waterloo, Centre for Extended Learning.

Other Sources

Respect the copyright of others and abide by all copyright notices and regulations when using the computing facilities provided for your course of study by the University of Waterloo. No material on the Internet or World Wide Web may be reproduced or distributed in any material form or in any medium, without permission from copyright holders or their assignees. To support your course of study, the University of Waterloo has provided hypertext links to relevant websites, resources, and services on the web. These resources must be used in accordance with any registration requirements or conditions which may be specified. You must be aware that in providing such hypertext links, the University of Waterloo has not authorized any acts (including reproduction or distribution) which, if undertaken without permission of copyright owners or their assignees, may be infringement of copyright. Permission for such acts can only be granted by copyright owners or their assignees.

If there are any questions about this notice, please contact the University of Waterloo, Centre for Extended Learning, Waterloo, Ontario, Canada, N2L 3G1 or extendedlearning@uwaterloo.ca.