



# ENVS\*2270 Impacts of Climate Change

Winter 2022

Section(s): 01

School of Environmental Sciences

Credit Weight: 0.50

Version 1.00 - January 06, 2022

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## 1 Course Details

### 1.1 Calendar Description

This course will provide students with an overview of recent research into what climate change means for Canada and Canadians. Students will learn about evidence for significant changes to the Boreal forests and about the potential impacts of climate change on human health through increasing heat waves and the heat stress on individuals. The course is intended to bridge the gap between abstract discussion of the climate and understand what these changes mean at both personal and societal levels.

**Pre-Requisites:**

Minimum of 4.00 credits

**Restrictions:**

May not be taken by students in the BAS, BBRM, BSC, BSC(Agr) or BSC(Env) programs

### 1.2 Timetable

RICH 2529

Tues, Thur, 11:30AM - 12:50PM

**Please Note:** For the first two weeks of classes, lectures will take place on Tuesdays and Thursdays from 11:30 AM to 12:50 PM via the **Zoom Tool accessible via CourseLink (under Content)**. After the first two weeks, you will then have the option to attend lectures either in-person (in the classroom listed above) or remotely via Zoom. All lectures throughout the semester will be recorded and made available after the class.

### 1.3 Final Exam

This course will have an **in-person Final Exam** on Monday April 11, 8:30 AM to 10:30 AM

Exam location will be available on WebAdvisor later in the semester.

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## 2 Instructional Support

### 2.1 Instructional Support Team

**Instructor:** Kimberley Bolton  
**Email:** kbolton@uoguelph.ca  
**Telephone:** +1-519-824-4120 x54266  
**Office:** ALEX 260

I will not have regular office hours. Please make an appointment to see me via email. I am happy to meet with you in person or online.

### 2.2 Teaching Assistants

**Teaching Assistant (GTA):** Jessica Guezen  
**Email:** guezenj@uoguelph.ca  
**Teaching Assistant (GTA):** Yajun Peng  
**Email:** ypeng09@uoguelph.ca

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## 3 Learning Resources

### 3.1 Required Resources

#### CourseLink (Website)

The instructor uses CourseLink for posting announcements, recorded lectures, class readings, discussions, and other required or recommended materials relevant to the course.

Please check CourseLink frequently.

#### Zoom (Software)

For the first two weeks of class you will need to access the lectures via Zoom. After that, you have the option of attending lectures in person or via Zoom.

You can access Zoom from within the CourseLink page under Content. Please check your system requirements at <https://opened.uoguelph.ca/student-resources/system-and-software-requirements>

All lectures will be recorded via Zoom and later shared on CourseLink.

By default, you will join the class with microphone and video turned off. I encourage everyone to participate with audio and video when applicable. If you have connectivity and/or privacy concerns, the use of video is not required. Within Zoom, feel free to rename yourself to your initials.

There is also an option to call into a Zoom meeting with your phone if you are having difficulties with internet.

## 3.2 Additional Resources

**Online materials (readings and videos) will be assigned throughout the course. (Other)**

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# 4 Learning Outcomes

## 4.1 Course Learning Outcomes

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

1. Explain how interactions among atmosphere, ocean, land, and life lead to climate changes.
2. Describe the direct observations of climate change in recent decades, and articulate the evidence attributing global warming in this time period to human causes
3. Assess the utility, and limits, of climate models to predict global and regional climate change.
4. Analyze the evidence regarding impacts of climate change globally and in Canada.
5. Engage critically and in a scholarly manner, in public arguments about climate change issues.
6. Evaluate the opportunities for climate change adaptation globally and in Canada.

7. Describe proposed climate change mitigation strategies.

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## 5 Teaching and Learning Activities

### 5.1 Lecture Content

- Weather and Climate
    - Atmospheric circulation and ocean currents
    - Earth's energy budget
    - Radiative forcing
    - The Carbon cycle
  - Let's talk about Science
    - Scientists and the peer review process
    - IPCC
    - The importance of isotopes
    - Understanding graphs
  - Evidence of Climate Change
    - Greenhouse Gases and the human fingerprint
    - Global temperature
    - Paleoclimate and climate proxies
    - Orbital cycles
  - Climate Projections
    - The climate models and representative concentration pathways
    - The predictions
  - Impacts of Climate Change on Oceans
    - Ocean warming and acidification
    - Sea-level rise
  - Impacts of Climate Change
    - How do we study impacts?
    - Impacts on natural ecosystems
    - Impacts on humans
    - What's in store for Canada?
  - Adaptation and Mitigation
    - Climate Change adaptation
    - Mitigation strategies
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## 6 Assessments

### 6.1 Marking Schemes & Distributions

Name	Scheme A (%)
Online Group Discussions	10
Online Midterm Examination	15
Climate Change Projections Assignment	15
Short Critical Thinking Paper	20
Final Exam	40
Total	100

### 6.2 Assessment Details

#### Online Group Discussions (10%)

**Date:** Throughout semester

**Learning Outcome:** 2, 3, 4, 5

There are five discussion topics. Instructions and due dates are available on CourseLink.

Online Group Discussions are an important vehicle for you to practice your critical thinking and for you to progress toward the course learning objectives. The discussions will be related to assigned readings and/or videos. A list of resources will be provided to you on CourseLink.

#### Online Midterm Examination (15%)

**Date:** Thu, Feb 17, Online (under Quizzes)

**Learning Outcome:** 1, 2, 3, 4

The Online Midterm Examination will be available under the Quizzes Tool on CourseLink. More information about the format of the Online Midterm Examination will be provided to you during lectures.

The Online Midterm Examination will be available from 11:30 AM to 12:30 PM on Thursday February 17. You will be able to begin the exam anytime during this one-hour period. Once you begin the exam, you will have 1 hour and 15 minutes to complete it.

**Climate Change Projections Assignment (15%)**

**Due:** Sun, Mar 6, 11:59 PM

**Learning Outcome:** 2, 3

Details will be available on CourseLink.

The Climate Change Projections Assignment should be submitted electronically via Dropbox on CourseLink

**Short Critical Thinking Paper (20%)**

**Due:** Sun, Mar 27, 11:59 PM

**Learning Outcome:** 3, 4, 5, 6

Details will be available on CourseLink.

The Short Critical Thinking Paper should be submitted electronically via Dropbox on CourseLink.

**Final Exam (40%)**

**Date:** Mon, Apr 11, 8:30 AM - 10:30 AM

**Learning Outcome:** 1, 2, 3, 4, 5, 6, 7

The Final Exam will be an **in-person examination**.

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## 7 Course Statements

### 7.1 Grading

Policy on Late Assignments: All late assignments will receive a 5% deduction for each day that they are late. Extensions will be considered for medical reasons or other extenuating circumstances. If you require an extension, contact the instructor (Dr. Kim Bolton) with a valid reason **in advance** of the due date.

### 7.2 Group Work

You are not authorized to work together on any part of this course. Doing so would constitute academic misconduct.

### 7.3 Turnitin Originality Check

In this course, your instructor will be using **Turnitin for the Short Critical Thinking Paper**. Turnitin will be used, integrated with the CourseLink Dropbox tool, to detect plagiarism, unauthorized collaboration or copying as part of the ongoing efforts to maintain academic integrity at the University of Guelph.

Individual assignments submitted to the Dropbox tool will be included as source documents in the Turnitin.com reference database solely for the purpose of detecting plagiarism of such papers. Use of the Turnitin.com service is subject to the Usage Policy posted on the Turnitin.com site.

A major benefit of using Turnitin is that you will be able to educate and empower yourself in preventing academic misconduct. In this course, you may screen your own Short Critical Thinking Paper through Turnitin as many times as you wish before the due date. You will be able to see and print reports that show you exactly where you have properly and improperly referenced the outside sources and materials in your paper.

## **8 University Statements**

### **8.1 Email Communication**

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

### **8.2 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. The grounds for Academic Consideration are detailed in the Undergraduate and Graduate Calendars.

Undergraduate Calendar - Academic Consideration and Appeals

<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml>

Graduate Calendar - Grounds for Academic Consideration

<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml>

Associate Diploma Calendar - Academic Consideration, Appeals and Petitions

<https://www.uoguelph.ca/registrar/calendars/diploma/current/index.shtml>

### **8.3 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

<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-drop.shtml>

Graduate Calendar - Registration Changes

<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/genreg-reg-regchg.shtml>

Associate Diploma Calendar - Dropping Courses

<https://www.uoguelph.ca/registrar/calendars/diploma/current/c08/c08-drop.shtml>

## 8.4 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.

## 8.5 Accessibility

The University promotes the full participation of students who experience disabilities in their academic programs. To that end, the provision of academic accommodation is a shared responsibility between the University and the student.

When accommodations are needed, the student is required to first register with Student Accessibility Services (SAS). Documentation to substantiate the existence of a disability is required; however, interim accommodations may be possible while that process is underway.

Accommodations are available for both permanent and temporary disabilities. It should be noted that common illnesses such as a cold or the flu do not constitute a disability.

Use of the SAS Exam Centre requires students to make a booking at least 14 days in advance, and no later than November 1 (fall), March 1 (winter) or July 1 (summer). Similarly, new or changed accommodations for online quizzes, tests and exams must be approved at least a week ahead of time.

For Guelph students, information can be found on the SAS website

<https://www.uoguelph.ca/sas>

For Ridgetown students, information can be found on the Ridgetown SAS website

<https://www.ridgetownc.com/services/accessibilityservices.cfm>

## 8.6 Academic Integrity

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 encourages academic integrity. 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.

Undergraduate Calendar - Academic Misconduct

<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-amisconduct.shtml>

Graduate Calendar - Academic Misconduct

<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml>

## 8.7 Recording of Materials

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

## 8.8 Resources

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

Academic Calendars

<https://www.uoguelph.ca/academics/calendars>

## 8.9 Disclaimer

Please note that the ongoing COVID-19 pandemic may necessitate a revision of the format of course offerings, changes in classroom protocols, and academic schedules. Any such changes will be announced via CourseLink and/or class email.

This includes on-campus scheduling during the semester, mid-terms and final examination schedules. All University-wide decisions will be posted on the COVID-19 website (<https://news.uoguelph.ca/2019-novel-coronavirus-information/>) and circulated by email.

## 8.10 Illness

Medical notes will not normally be required for singular instances of academic consideration, although students may be required to provide supporting documentation for multiple missed assessments or when involving a large part of a course (e.g.. final exam or major assignment).

## 8.11 Covid-19 Safety Protocols

For information on current safety protocols, follow these links:

- <https://news.uoguelph.ca/return-to-campus/how-u-of-g-is-preparing-for-your-safe-return/>
- <https://news.uoguelph.ca/return-to-campus/spaces/#ClassroomSpaces>

Please note, these guidelines may be updated as required in response to evolving University, Public Health or government directives.

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