

# Ecological Consequences of Climate Change

## Course description

Climate change is one of the most important and complex challenges facing us today. This course examines ecological consequences of climate change across temporal and spatial scales. We will take a variety of approaches to better understand the ecosystem responses of climate change including in-depth discussions to contextualize these responses.



We are learning on the  
traditional territories of  
the Haunenosaunee,  
Anishinabek and the  
Neutral peoples



## Important info



**Prof:** Dr. Andrew Trant

**Email:** [atrant@uwaterloo.ca](mailto:atrant@uwaterloo.ca)

**Student hours:** Tuesday 10:30-11:30am (via Teams)

## What's inside?

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# Requirements

No text for this class so you *have* to engage!

## Resources

Lectures

Journal articles

Guest Speakers

Hands-on

## The intent

I see that the learning that will occur in this course will happen in many different directions. I want you to learn from me and I want to learn from you. We all bring such varied perspectives to the conversation. Journal articles, guest speakers and other forms of media will also help us distill ideas and provide essential resolution to our ideas. Knowledge, like landscapes, changes across space and through time.

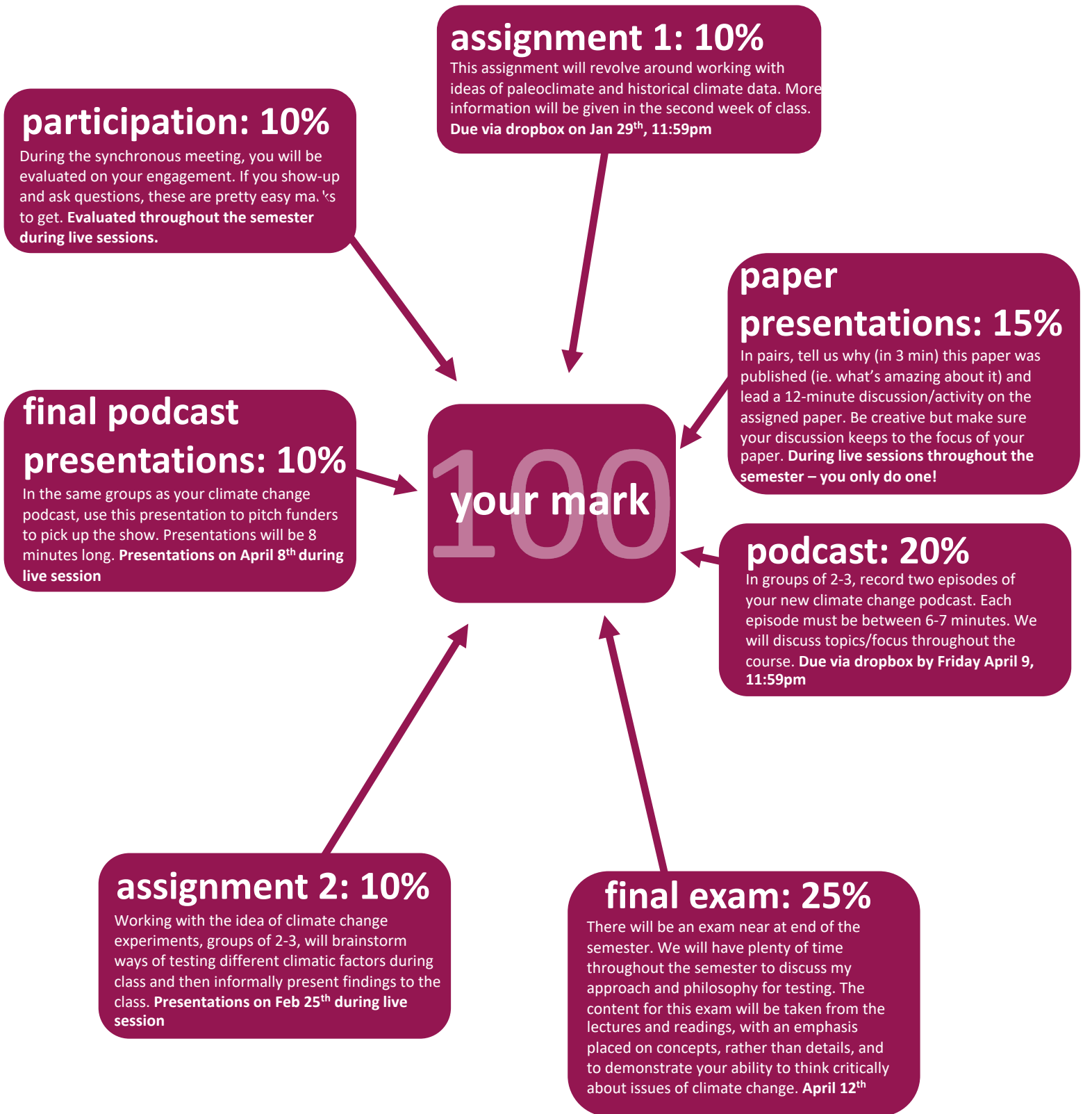
## Objectives

By the end of this course, you should be on a path to life-long learning as an **ecologically-literate citizen and well-versed in ecological consequences of climate change**. More specifically, you should be able to do the following (our course learning outcomes):

**identify** and **explain**, with examples, the main principles of ecology from a variety of perspectives and across a variety of scales;  
**demonstrate** how these principles and concepts apply to real-world situations ;  
**analyze** the elements of climate change science; and  
**evaluate** how we communicate and understand the ecological consequences of climate change.

**These course learning outcomes will not only prepare you to be an informed citizen and member of the community of life on earth, but also provide the basis for knowledge, humility, and wisdom in your dealings with ecological problems in your daily life and eventual career.**

# Assessment



Late penalties are 5% per day

# Policies & resources

This syllabus is a contract between us, so you must abide by the policies and schemes laid out here (as will I, for my part). If you have any questions or concerns, please speak with me as soon as possible.

## **Academic integrity and offences**

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 (<http://uwaterloo.ca/academicintegrity/Students/index.html>). You are expected to know what constitutes academic integrity, to avoid committing academic offences, and to take responsibility for your actions. If you are unsure whether an action constitutes an offence, or need help in learning how to avoid offences (e.g., plagiarism, cheating) or about “rules” for group work/collaboration, please complete the tutorial at <http://www.lib.uwaterloo.ca/ait> and seek guidance from the course professor, your Undergraduate Advisor, or the office of the Associate Dean – Undergraduate. When misconduct has been detected, disciplinary penalties will be imposed under Policy 71 – Student Discipline (<http://www.adm.uwaterloo.ca/infosec/Policies/policy71.htm>). For information on categories of offences and types of penalties, refer to Policy 71. Within the Faculty of Environment, those committing academic offences (e.g. cheating, plagiarism) will be placed on disciplinary probation and will be subject to penalties that may include a grade of 0 on the affected course element, 0 in the course, suspension, and expulsion.

## **Attendance and preparation**

You are strongly encouraged to engage with class content because they will be interactive in nature and develop the course material. Thus, please come to class prepared to discuss and engage.

## **AccessAbility**

AccessAbility Services (<https://uwaterloo.ca/accessability-services>) collaborates with all academic departments to arrange appropriate accommodations for students who require them without compromising the academic integrity of the curriculum. If you require accommodation for any reason, please discuss with AccessAbility Services and register at the beginning of each academic term.

## **Assignment submission**

Please refer to the course schedule and LEARN documents for detailed instructions on submission of all assignments and assessments.

*tip:*

If you are having any trouble, come see me ASAP. Don't wait.

# Policies & resources

Continued from last page

## Mental health

Along with the University of Waterloo and the Faculty of Environment and its Departments, I consider your well-being to be **extremely important**. We recognize that many students face health challenges, physical and/or emotional. *Please note that help is available.* Mental health is a serious issue for everyone and can affect your ability to do your best work. Counselling Services ([www.uwaterloo.ca/counselling-services](http://www.uwaterloo.ca/counselling-services)) is an inclusive, non-judgmental, and confidential space for anyone to seek support. They offer confidential counselling for a variety of areas including anxiety, depression, grief, relationship issues, sexuality, stress management, substance use, and much more.

## Religious observances

Please email me at the beginning of term if you require special accommodation for religious observances that are not otherwise accounted for in the scheduling of classes and assignments.

## Deadlines

There is a penalty of 5% per day for late submissions.

## Lecture handouts and intellectual property

Powerpoint lectures will not be a complete transcription of the lecture. I will not include all information (to encourage you to be active note-takers), or all images (for copyright reasons). These slides are meant to be a template for your note-taking: they will not replace careful attention, note-taking and participation. These are important skills to develop for your future study and career.

You should be aware that this course contains the intellectual property (IP) of the instructor and the University of Waterloo. IP includes items such as lecture content, both spoken and written (and any audio/video recording thereof); lecture handouts, presentations, and other materials in the course (e.g., PowerPoint slides); and questions or solution sets from various types of assessments (e.g., assignments, quizzes, tests, final exams). Course materials, and the IP contained therein, are used to enhance a student's educational experience. However, sharing this IP without the owner's permission is a violation of IP rights. For this reason, you must ask for permission before uploading and/or sharing the IP of others online (e.g., to an online repository). Permission is also necessary before sharing the IP of others from completed courses with students taking the same/similar courses in subsequent terms/years. Please alert the instructor if you become aware of IP belonging to others (past or present) circulating, either through the student body or online. The IP rights owner deserves to know (and may have already given their consent).

No course material may be shared or used outside this course. The only exceptions are those materials that are external (cited) courses (e.g., TedEd, YouTube, textbook, journal articles) which may be used or shared as permitted by the content owners. If any presenter in this course discloses information for the benefit of your learning but requests you do not disclose the source of the information or share the information itself, please respect those wishes.





*tip:*

**Come to Student Hours!  
Your mark will reflect the  
added effort!**

# Schedule

FACULTY OF ENVIRONMENT  
ERS 431

Week	Day	Topic	Deadlines
1	Jan 11	Introduction & overview	
2	Jan 18	Patterns, drivers & predictions	Sign-up for presentations
	Jan 21 (live)	Assignment 1	
3	Jan 25	Paleoclimate	
	Jan 28 (live)	2 paper presentations + discussion	Assignment 1 due Friday Jan 29 <sup>th</sup> by 11:59pm (10%)
4	Feb 1	Life history and phenology	
	Feb 4 (live)	2 paper presentations	
5	Feb 8	Experiments	
	Feb 11 (live)	Assignment #2	
6	Feb 15	<b>READING WEEK</b>	
7	Feb 22	Population responses and range dynamics	
	Feb 25 (live)	Assignment 2 presentations (10%)	
8	Mar 1	Range dynamics II	
	Mar 4 (live)	2 paper presentations + discussion	
9	Mar 8	Community and ecosystem responses	
	Mar 11 (live)	2 paper presentations + discussion	
10	Mar 15	<b>SHORT WEEK – Get caught up</b>	
11	Mar 22	Community and ecosystem responses	
	Mar 25 (live)	2 paper presentations + discussion	
12	Mar 29	Communicating/alternative perspectives	
	Apr 1 (live)	No live session	
13	Apr 5	No lecture (cause you will be wiped)	
	April 8	Podcast presentations (10%)	Podcast due April 9 <sup>th</sup> by 11:59pm (20%)
14	April 12	Exam	

-  During our live 'synchronous' sessions (1 & 4pm, Thursdays via Teams)
-  Asynchronous lectures
-  Exam
-  No content delivered / due that week