



## ECON 383 Climate Economics

Winter Session: First Term, Sept-Dec 2024

**Instructor Name:** Dr. Felix Pretis

**Office:** BEC 388

**E-Mail:** fpretis@uvic.ca

**Office Hours:** Wednesdays 11:30-12:30 and via email appointment.

**Lectures:** see online registration.

**Teaching Assistant(s):** TBC

**Syllabus updated on:** August 28<sup>th</sup>, 2024

### UVic Land Acknowledgement

*We acknowledge and respect the lək'əŋən peoples on whose traditional territory the university stands and the Songhees, Esquimalt and WSÁNEĆ peoples whose historical relationships with the land continue to this day.*

### Course Content

Climate change is an economic problem: it is both driven by economic activity and profoundly impacts economic production and wellbeing through factors such as extreme events and rising temperatures. While economic policy solutions exist in the form of carbon pricing or emissions caps, climate change poses unique challenges that defy much of standard economic analysis. Effective emission reductions necessitate unprecedented international cooperation, and our understanding of impacts is plagued by pervasive uncertainty when translating global emissions into local damages. Above all, greenhouse gas emissions - the main driver of climate change - constitute a case where those responsible for the environmental impact do not face the true costs.

This course focuses on disentangling the challenges of climate change, first providing a physical-science background then turning to the main economic drivers and challenges of our changing climate using in-class experiments, interactive models, and hands-on policy evaluation. Topics covered in this course range from explaining the drivers of emissions, to estimates of the economic impacts of climate change, and assessments of available policy options to mitigate and adapt to climate change.

**Note:** As of fall 2024, credit for this course **counts** towards an Economics program requirement. Please see the formal UVic Calendar [entry](#).

### Learning Outcomes:

Students will gain an understanding of climate science, the economic drivers and challenges of climate change, the economic impacts of a changing climate and possible policy solutions. By the end of the course, you will be able to:

1. Understand and explain the basics of climate science, how greenhouse gases contribute to global climate change, and how climate projections are used in scenario analyses.
2. Communicate the main economic challenges and drivers of climate change.
3. Critically assess the economic impacts of climate change, how these are quantified, and what sources of uncertainty exist.

4. Understand basic tools of policy evaluation and be able to apply these to assess a range of economic policies to tackle climate change.

Delivery:

This course will be offered in person following UVic’s guidelines. Students may be required to wear masks during lectures, labs, office hours, and exams (subject to public health guidelines). Online (Zoom) office hours may be offered by appointment.

**Textbooks & Software**

**Textbook (optional):** There is no required textbook, however, the course will use some material from Richard Tol’s book on *Climate Economics* (Tol, 2019), and some parts of Charles Kolstad’s *Environmental Economics* (2010). Additional reading will be provided.

Kolstad, C. (2010). *Environmental Economics*. 2<sup>nd</sup> Edition. Oxford University Press.

Tol, R. S. (2019). *Climate Economics: Economic Analysis of Climate, Climate Change and Climate Policy*. 2<sup>nd</sup> Edition. Edward Elgar Publishing.

**Software:** Please ensure you have access to (and are familiar with) *Microsoft Excel* to complete some of the in-class exercises and assignments (either through lab computers or your personal devices). There will be in-class interactive activities that rely on web access. If you do not have a personal computer/cell phone that allows you to access the internet in class, please contact me via email to set up alternative arrangements.

**Assessment**

The course is assessed through a final presentation (+ written summary), a midterm exam, a journal article presentation, and in-class participation. For all submitted assessments, I reserve the right to examine students in person concerning their understanding of their submitted work and adjust their mark accordingly.

**Overall Grade Structure:**

Final Presentation (‘Ted Talk’ Style Presentation + summary)	45%
Midterm Exam	30%
Journal Article Presentation & Discussion	15%
Class Participation	10%

*Final Presentation + Written Summary (45%):* prepare a short presentation in the style of ‘Ted-Talk’ on any of the climate economics issues introduced in the course, explicitly *going beyond (or more in-depth than)* the material covered in class. You may work alone or in groups of up to 4 people. Your presentation may be on any climate-economic topic, ranging from climate policy case studies to tools for policy evaluation, or ways of estimating impacts etc. The presentation should be in the style of a ‘Ted-talk’. This means an engaging presentation (with a possible +2 bonus points if the talk is also funny/entertaining) and not just a talk with simple slides. Be creative! Submit a short written summary of your presentation (or presentation script) after your presentation is complete.

Note that the presentation and summary constitute independent work and you must cite any literature you use. The consequences of plagiarism range from a failing grade for an assignment or course to disciplinary probation or even expulsion from the university. Review “[What is Plagiarism](#)” for the definition of plagiarism. I reserve the right to examine students in person concerning their understanding of their submitted work and adjust their mark accordingly.

No extensions will be granted on the presentation + summary without formal documented illness or affliction (see policy on late assignments). If you do not hold the final presentation/do not submit the summary without documented illness or family affliction, you will receive an “N” for the course.

*Midterm Exam (30%):* The midterm exam will take place during term. No extensions will be granted on the midterm exam without formal documented illness or affliction (see policy on late assignments). If you miss the midterm exam entirely without documented illness or family affliction, you will receive 0% on the exam. Any informal appeal or request for a grade review must be raised when the exams are returned. Late requests will not be considered. A review request will involve a review of the entire exam and may result in a lower or higher grade.

*Journal Article Presentation & Discussion (15%):* Each week a group of students will present one (or more) assigned papers (from the Climate-Economics literature) and lead a short discussion around the papers. The presentation should be around 15 minutes in length and briefly summarize the main points of the paper and place the paper in the context of the course. The presentation should also include a critical assessment of the paper and lead to a short class-wide discussion. Presentation slots will be assigned at the start of the course – see Brightspace. Please see the grading rubric on Brightspace.

*Class Participation (10%):* This course is designed to be interactive with in-class discussion and participation in experiments/games. Class participation will be assessed by active participation in activities, discussions, and lecture attendance. To achieve full marks, you should actively participate in discussions/activities, attend all guest lectures, as well as attend most regular lectures (defined as being present in at least 1/2 of the lectures). There will be in-class interactive activities that rely on web access. If you do not have a personal computer/cell phone that allows you to access the internet in class, please contact me via email to set up alternative arrangements.

Essential Course Requirements: The final presentation (+ summary) as well as the midterm exam must be completed to not receive an “N” on this course.

**Grading Scale:**

<b>Passing Grades</b>	<b>Percentage</b>	<b>Description</b>
A+	90-100	Exceptional, outstanding performance. Normally achieved by a minority of students. These grades indicate a student who is self-initiating, <u>exceeds expectations</u> and has an insightful grasp of the subject matter.
A	85-89	
A-	80-84	
B+	77-79	Very good, good and solid performance. Normally achieved by the largest number of students. These grades indicate a good grasp of the subject matter or excellent grasp in one or more areas balanced with satisfactory grasp in other areas.
B	73-76	
B-	70-72	
C+	65-69	Satisfactory, or minimally satisfactory. These grades indicate a satisfactory performance and knowledge of the subject matter.
C	60-64	
D	50-59	Marginal performance. A student receiving this grade demonstrated a superficial grasp of the subject matter.
<b>Failing Grades</b>		
F	0-49	Unsatisfactory performance. Wrote examinations and completed course requirements.
N	0-49	Did not complete course requirements by the end of term or session.

**Course Policies**

This course adheres to the [Department Course Policies](#) of the Department of Economics that deal with the following issues:

- Academic concessions
- Academic integrity (plagiarism and cheating)
- Attendance
- Grading
- Inclusivity and diversity
- Late adds
- Late assignments
- Repeating courses
- Review of an assigned grade
- Students with a disability
- Term assignments and debarment from examinations
- Travel plans
- Waitlists

The following policies are explicitly included because of their importance.

**Late Assignments and Missed Examinations**

Consideration for missed examinations or late assignments will be given only on the basis of documented illness (or in-line with the University’s policies at the time), accident or family affliction, and for no other reasons. In the event of a missed examination, students are advised to follow the procedures outlined in the University Calendar: [University Examination Policies](#)

If a student misses an exam due to one of the above reasons, there may be a makeup exam offered during the Economics department's makeup exam sessions. More than one makeup exam is not regularly given, and students should follow University's guidelines on formal deferrals.

Students are advised not to make work or travel plans during lecture hours to be able to attend all classes and examinations. There will be no special accommodation (and no makeup exams) if travel plans conflict with examinations held during class hours or the examination period.

### **Waitlist Policies**

- Instructors have no discretion to admit waitlisted students or raise the cap on the course.
- Students on the waitlist should discuss with the instructor how to ensure they are not behind with coursework in the event they are admitted.
- Registered students who do not show up in the first seven calendar days from the start of the course may be dropped from the course.
- Registered students who decide not to take the course are responsible for dropping the course, and are urged to do so promptly out of courtesy toward waitlisted students.
- Waitlist offers cease after the last date for adding courses irrespective of published waitlists.

### **Academic Integrity**

Academic integrity requires commitment to the values of honesty, trust, fairness, respect, and responsibility. Students are expected to observe the same standards of scholarly integrity as their academic and professional counterparts. Review "[What is Plagiarism](#)" for the definition of plagiarism. Note: Submitted work may be checked using plagiarism detection software. In the event of concerns about plagiarism or cheating, I reserve the right to examine students in person concerning their understanding of their submitted work and adjust their mark accordingly. This applies to all exams and submitted work, including problem sets, and the final project.

Students must abide by UVic academic regulations and observe standards of 'scholarly integrity,' (no plagiarism or cheating). This applies to all assignments and exams (take-home or otherwise). All online exams must be taken individually and not with a friend, classmate, or group.

All alleged violations of academic integrity will be investigated and a student who is found to have engaged in unethical academic behaviour, including the practices described in the [Policy on Academic Integrity](#) in the University Calendar, is subject to penalty by the University.

### **Artificial Intelligence (AI)**

The use of AI (e.g. large language models) is permitted with restrictions for this course. If you use AI, you must include a statement on which AI was used, what prompts you used, and a short (1 page) report fact-checking the AI output. The use of AI is not permitted during exams. Should you violate this rule, you will have violated UVic's academic integrity policy and a complaint against you under this policy will be filed accordingly.

### **Student Code of Conduct**

The Humanities, Science, and Social Sciences Faculties have adopted this [Student code of conduct](#). Please, review.

## University Policy on Human Rights, Equity and Fairness

The University is committed to promoting, providing and protecting a positive, supportive and safe learning and working environment for all its members. See [General University Policies](#)

## Accessibility & Health Resources

Students with diverse learning styles and needs are welcome in this course. In particular, if you have a disability/health consideration that may require accommodations, you are free to approach me; however, you must register with the [Centre for Accessible Learning](#) (CAL) for formal arrangements to be made. The CAL staff are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations. The sooner you let us know your needs the quicker we can assist you in achieving your learning goals in this course.

[Health Services](#) - University Health Services (UHS) provides a full service primary health clinic for students, and coordinates healthy student and campus initiatives.

[Counselling Services](#) - Counselling Services can help you make the most of your university experience. They offer free professional, confidential, inclusive support to currently registered UVic students.

[Elders' Voices](#) - The Office of Indigenous Academic and Community Engagement (IACE) has the privilege of assembling a group of Elders from local communities to guide students, staff, faculty and administration in Indigenous ways of knowing and being.

## Brightspace

Brightspace is used extensively for the course. All students are expected to be fully functional with the system. The lecture material, problem sets, and labs will be posted in Brightspace. Please note that the lecture notes online are only outlines of the actual lectures, and additional material may be covered during the lectures. All announcements will be posted in Brightspace. Students are advised to check it frequently.

## Course Experience Survey (CES)

I greatly value your feedback on this course to continually improve the course and my teaching.

Informal early feedback: Early on during the lectures, I may distribute informal feedback forms to provide ongoing feedback on the instruction style. These will be anonymous and only used to improve teaching while the course is progressing.

Formal Experience Survey: Towards the end of term you will have the opportunity to complete a confidential course experience survey (CES) regarding your learning experience. The survey is vital to providing feedback to me regarding the course and my teaching, as well as to help the department improve the overall program for students in the future.

When it is time for you to complete the survey, you will receive an email inviting you to do so. If you do not receive an email invitation, you can go directly to the [CES log-in](#). You will use your UVic NetLink ID to access the survey, which can be completed on your laptop, tablet or mobile device. I will remind you nearer the time, but please be thinking about this important activity, especially the following three questions, during the course.

- What strengths did your **instructor** demonstrate that helped you learn in this course?
- Please provide specific ideas as to how the **instructor** could have helped you learn more effectively.

Please provide specific suggestions as to how this **course** could be improved.

**Course Schedule**

The tentative course structure and schedule is shown below. This is subject to change – check Brightspace for up-to-date topics and deadlines. Detailed reading list for each topic will be provided on Brightspace.

	<b>Topic</b>	
Topic 1: Introduction to Climate Science		Weeks 1-3
	Science of Climate Change	
	Impacts & Projections	Sept. 18 <sup>th</sup> : Guest Lecture - Neil Swart (Environment Canada & Canadian Center for Climate Modelling and Analysis)
	Emissions	
Topic 2: Environmental Economics		Weeks 4-8
	Social Choice	
	Market Failures: Externalities, Public Goods	
	Carbon Capture and Storage: Ocean Networks Canada	Visit to Ocean Networks Canada (Queenswood Campus)
	Policy Instruments	
	International Cooperation	
Topic 3: Optimal Climate Policy		Weeks 8-13
	Integrated Assessment & Cost-Benefit Analysis	
	Policy & Policy Evaluation	
	Evidence-Based Optimism	

- Final Presentation: in-class, December 4th, 2024. Summaries to be submitted by December 11<sup>th</sup>, 4pm.
- Midterm Exam: October 30<sup>th</sup>, 2024 (during class time)
- Journal Article Presentations and Discussions: Weekly during class times, once per group, please see Brightspace for signup.

All due dates and times refer to Pacific time.

## **Repeating Courses**

According to the University of Victoria Calendar <http://web.uvic.ca/calendar>

*“A student may not attempt a course a third time without the prior approval of the Dean of the Faculty and the Chair of the Department in which the course is offered unless the calendar course entry states that the course may be repeated for additional credit. A student who has not received this approval may be deregistered from the course at any point and may be asked to withdraw from his or her declared or intended program.”*

In order to request permission to attempt this course for the third time, you must follow the instructions provided under the link **Repeating Courses** at

<http://www.uvic.ca/socialsciences/economics/undergraduate/home/course%20policies/index.php>

Failure to obtain permission will result in deregistration from the course.

## **Reference Letters**

Students in this course regularly request reference letters for graduate school or job applications. A generic letter, written by someone that knows you superficially, might work against you. Therefore, if you are considering asking me to provide a reference letter, please make sure that: you speak to me with sufficient notice; and have actively participated in class/office hours for me to provide a positive assessment of your performance and engagement with the material.

## **E-mail correspondence**

Emails should be limited to critical matters, such as inability to attend an exam, or prolonged illness, and should include the course name and number in the subject line. Questions on course material should be asked during office hours or in class. I will not respond to emails that can be answered using the course syllabus. Please make sure to use a professional tone in your emails.