

Climate Change Economics and Policy
AAE 246
Fall 2017

Instructor: Prof. Corbett Grainger
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Office Hours: Mondays, 3:00-5:00 pm, or by appointment

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Office Hours: Tuesdays 2:15 – 4:15 p.m.

Class Meeting: Mondays and Wednesdays, 1:20 -2:10, Russel Labs 150; Discussion Sections vary

Class Website: Canvas (Learn@UW) Check regularly for announcements, readings, assignments, grades, etc.

Course Goals and Assessment: My goal for this course is to introduce students to how economists view climate change, from its causes to potential policy solutions. Successful students will learn

- the basic tools and frameworks used by economists to analyze environmental problems;
- why emissions are oversupplied, and how alternative policies can mitigate climate change;
- the economic costs of different approaches to correcting market failures, with a focus on market-based mechanisms;
- how to critically analyze climate change as well as proposed solutions;
- the impacts of climate change, their economic evaluation and how adaptation can lower the costs of climate damages;
- how economists compare costs and benefits of generations that live centuries apart;
- how one can design climate policy when our projections of both the costs and the benefits of climate policy are highly uncertain;
- how to account for equity considerations in an economic assessment of climate change policy;
- the role of international trade and factor movements in designing effective climate policy;
- why it has been difficult to agree on effective international treaties to curb emissions.

Expectations: Students are expected to work through the readings and come to class prepared to participate. We will learn basic economic principles in class, but students are assumed to be familiar with basic mathematics (algebra, geometry). Most importantly, students should be prepared to be challenged and to work hard. Students can expect the professor and teaching assistants to facilitate learning through class time, assignments, and office hours.

Readings: There are two required texts for the class, *The Climate Casino* by William Nordhaus, and *Climate Shock* by Gernot Wagner and Martin Weitzman. These books are approachable, entertaining, clear, concise and inexpensive. For topics outside the scope of the books, other readings will be posted on the course website. Students will be responsible for understanding all material from required readings.

Academic Honesty: I have *zero* tolerance for cheating of any kind. If I find you cheating, not only will you receive a zero for that assignment, quiz or exam, but I will also do my best to pursue harsher treatment through the university. Consult the University's policy regarding academic misconduct.

While I encourage students to work together on homework, you must *turn in a write-up that represents your own work and understanding of the material*. Verbatim (or suspiciously similar) copies of homework answers will be considered cheating. Do your own work and everything will be fine.

Special Accommodations: Please contact me directly if you have a disability that requires special accommodations.

Email: Please use email sparingly, and write clearly and professionally. Keep in mind that many questions cannot properly be answered via email. Although I try to reply in a timely manner, do not expect an immediate response.

Questions of clarification should be sent to your *Teaching Assistant*. If you email the TA, be considerate; it may take a while before you receive a response (i.e. if you email at midnight, do not expect an immediate reply).

Lecture Notes: I will do my best to make lecture notes available prior to each lecture. The notes are meant to complement (not substitute) your attendance in class. The notes cover some of the main points in class but are by no means exhaustive. These are highlights, not a textbook, so my lecture notes will not completely cover what is discussed in class. Note: these notes are not to be circulated in any form (or posted online) by students without permission from me.

Section: Students are expected to attend the TA-led discussion sections. If, due to some personal emergency, you cannot attend your scheduled section, you may attend another time, provided the TA gives you permission. Material covered in discussion sections may be included on exams or in homework questions.

Announcements: Any announcements regarding this class will be posted online and/or sent to your university e-mail account. Please check your e-mail and the course website regularly.

Homework (and/or Quizzes): Homework problems will be assigned approximately bi-weekly, and they will be due at the beginning of class on the due date (no exceptions!). If you cannot come to class on the day it is due, you should drop it in my mailbox **before** class starts. **Do not turn in your assignment via email unless specifically instructed to do so.**

Homework assignments generally consist of multiple questions. Unless stated otherwise, on the due date, we will pick a question at random (rolling a die, drawing a number out of a hat, etc.) to determine which question will be graded. This serves two purposes: it provides an incentive to put effort into each question, and it eases the grading burden for this large class, which allows us to grade and return assignments in a timely manner. I will post a *sketch* of the homework solutions on the course website.

Although I generally do not do so, I reserve the right to have a quiz on the day that the assignment is due. The quiz would be based on (or even taken directly from) the homework questions.

Late homework will not be accepted. *The lowest grade from homework/ quizzes will be dropped, and the others will receive equal weight when calculating your course grade.*

Exams: There will be two midterms and one comprehensive final exam. Exams may cover questions from class, notes, discussion section, or assigned readings. With the exception of *calculators*, all electronic devices must be turned off and out of reach during exams, no exceptions.

Policy on Missed Quizzes or Exams: Out of fairness to everyone in the class, exams are only given at the assigned time and cannot be made up afterward. If you cannot attend an exam due to a personal emergency outside your control, please let me know *beforehand* if at all possible. If you miss an exam for a non-emergency, you will receive a zero.

I will only give one final exam on the date scheduled by the Registrar, no exceptions (plan accordingly). The final will be held on **Monday, December 18, 2017, 7:25 - 9:25 pm.**

A Note on Electronic Devices: Laptops are allowed in class, but the purpose should be for *taking notes* (not browsing the internet, checking your e-mail, Facebook, etc.). It goes without saying, but cell phones, tablets, and other electronic devices are distracting and should not be out during class. If you use a computer or tablet to take notes, I ask that you sit toward the front of the classroom.

Grading: I want you to learn to think critically about climate change using an economic framework. If you want to succeed, it is generally not sufficient to memorize terms or to try to learn a “recipe” for solving problems.

Your final grade will be based on the following components and weights.

Homework/Quizzes:	30%
Midterm 1:	20%
Midterm 2:	20%
Final Exam:	30%

Rough Schedule (a day-by-day schedule with readings and assignments will be online):

Part 1: Basics of Climate Change, Sources, Emissions Reductions, Control Policies
Tentative Date for Midterm 1: October 11, 2017

Part 2: Climate Change Impacts, Assessment, Economic Valuation, Discounting
Tentative Date for Midterm 2: Nov 8, 2017

Part 3: Optimal Policy, Mitigation, Adaptation, Geoengineering (and odds and ends):

Comprehensive Final Exam: Saturday, December 17, 5:05-7:05 pm

Nota Bene: I retain the right to change the schedule and structure of this course. Any changes will be announced in class and posted on the course website.