Logistics

Lecture: TR 1:00-2:30 p.m. (Dana 1028)
Professor: Samuel Stolper (sstolper@umich.edu)
GSI/Grader: TBD
Website: http://TBD.edu
Office Hours: TBD

About this course

Climate change has been called the ultimate economic problem, and possibly the greatest challenge humanity as a whole has ever faced. In this course, we will learn what is known – and what is not known – about the economics of climate change and climate policy. The course will open with a review of the economics rationale for government intervention in markets affecting the environment. We will then discuss climate cost-benefit analysis and the all-important, yet controversial, “social cost of carbon”. After laying this foundation for economic analysis of the climate, we will set our sights on policy solutions, giving attention to both international and domestic efforts, and to both carbon pricing and prescriptive regulation. From there, we will zero in on a few specific areas with large potential to affect climate outcomes: electric power, energy efficiency, and transportation. Finally, we will discuss the future of energy and its implications for climate change mitigation.

Prerequisite: NRE 570. Environmental Economics: Principles, Methods, and Tools

Class format and teaching goals

I have designed this course with several teaching goals in mind. I want you, the students, to:

- Become knowledge experts in the area of climate economics and policy
- Develop a versatile economic intuition, for use in any environmental professional setting
- Become more comfortable with quantitative thinking and analysis
• Improve your ability to communicate, translate, and wield rhetoric in the highly divisive scientific debate about how to respond to the changing climate

I think the best way to achieve these goals is to engage you, the students, as much as possible, and in as many ways as possible. I will devote some part of most class meetings to lecture, but I will also emphasize discussion, both during lecturing and in dedicated periods of class time. I will strive to make students feel comfortable speaking up, raising questions in all class meetings. And I will vary course assignments to give you practice in a variety of tasks to which you may be exposed in your future careers.

Assignments

Readings

For most classes, you will be assigned readings from some combination of textbook, academic journals, blogs, and popular media.

The textbook is Nathaniel O. Keohane and Sheila M. Olmstead, Markets and the Environment, 2nd Edition (2016). It is freely available in digital form; I will post it to the course website at the start of the semester.


Some of the assigned readings come from the blog run by the Energy Institute at Haas, based at the University of California Berkeley, Haas School of Business. There is an excellent group of environmental and energy economists at Berkeley, and I encourage you to peruse the blog (https://energyathaas.wordpress.com/) beyond the assigned readings.

Participation

In-class participation is a significant part of your final grade. This should not intimidate you; the course will be more fun and more valuable if we all share our perspectives, our questions, our ideas.

Op-ed

Writing is an extremely important professional skill that is often under-emphasized in quantitative disciplines like economics. With this assignment, you will practice your communication skills by writing an op-ed to your local newspaper. The short format and broad audience of an op-ed will challenge your ability to be clear, compelling, and convincing.

Presentation

During our class session on market-based policies, you will, in pairs, give short presentations (~5 minutes long) on a specific policy currently in use in some part of the world. Public
speaking is absolutely vital, whatever the job, whatever the field, so your presentation is good practice. Plus, we’ll all get up to speed on the performance of some really important climate policies!

Government memo

Cast in the role of chief economist for a government agency, you will be asked to advise your superior on policy choice in a climate-relevant market, as well as describing the possible economic impacts of that choice. In this setting, it is especially important to understand how markets work and what can be learned from the relevant research and real-world experience.

Cost-benefit analysis

As an analyst for a large electric utility, you will be tasked with reporting on the costs and benefits of an energy efficiency program. You will be provided with some numbers on the expenses and impacts of the program; the point of this exercise is to combine economic intuition with some hard numbers to produce an impact evaluation.

Final exam

The exam will be held on the last day of the course. It will test your ability to explain the important economics principles underlying the climate problem, using short verbal answers and/or graphical analysis. You will not be asked to recall specific policy impacts, solve lengthy math problems, or write rhetorically.

Grading

The distribution of course grades will resemble that of other SEAS courses. The weight of each assignment is as follows:

- Class participation: 20%
- Op-ed: 10%
- In-class presentation: 10%
- Government memo: 10%
- Cost-benefit analysis: 10%
- Final exam: 40%

Late (unexcused) assignments will be penalized 10 percentage-points per day (calendar date). Please notify me as soon as possible of any excused absences.

Course policies

Laptops and phones: Neither laptops nor phones are allowed in class. They would inevitably draw your attention away from class lecture and discussion.
Correspondence: I will try to get back to your emails within 24 hours. Please note NRE501.022 in your subject line. If you plan on asking multiple involved questions, please come to my office hours or schedule a meeting with me.

Homework submission: Problem sets and written assignments are due at the beginning of class, unless otherwise stipulated. You may submit your work via the homework section of the Canvas course website, or via hard copy in my mailbox (on the door of Dana 3006).

Work ethic: Do not plagiarize. If you paraphrase or copy work that is not your own, you must reference that work. The risk of plagiarizing is not worth the reward. More generally, cheating and academic dishonesty in any form will not be tolerated. Any student found to have cheated or behaved unethically or dishonestly will be given a zero on the assignment or exam involved and referred to the appropriate disciplinary committees at U of M.

Course calendar

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<th>Date</th>
<th>Day</th>
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<th>Unit</th>
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<td>Introduction: Why Study Climate Economics?</td>
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<td>Externalities and the Impacts of Climate Change</td>
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<td>The Social Cost of Carbon</td>
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<td>4</td>
<td>Efficiency vs. Equity</td>
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<td>International Climate Negotiation</td>
<td>In-class presentations made</td>
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<td>Market-based Policy</td>
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Detailed course schedule

Class #1 – January 4th. Introduction: Why Study Climate Economics?

Class #2 – January 9th. Externalities and the Impacts of Climate Change

Readings

1. KO: Chapter 5, pp. 80-94.
Class #3 – January 11th. The Social Cost of Carbon

Readings


Class #4 – January 16th. Efficiency vs. Equity

Readings


Assignments

1. Op-ed due

Class #5 – January 18th. International Climate Negotiation

Readings

1. KO: Chapter 5, pp. 94-97.

Class #6 – January 23rd. Market-Based Policy

Readings

1. KO: Chapter 8, pp. 139-162; 168-184.
2. Readings on EU-ETS, RGGI, AB-32

Assignments
1. In-class team presentations on specific market-based climate policies

**Class #7 – January 25th. Prescriptive Regulation**

Readings

1. KO: Chapter 9, pp. 168-173.
2. Readings on the Clean Power Plan, Renewable Portfolio Standards

**Class #8 – January 30th. International Trade**

Readings

2. TBD

Assignments

1. Government memo due

**Class #9 – February 1st. Electric Power**

Readings


**Class #10 – February 6th. Energy Efficiency**

Readings

Assignments

1. Cost-benefit analysis due

Class #11 – February 8th. Transportation

Readings


Class #12 – February 13th. Wrap-up: The Future

Readings


Assignments

1. TBD

Class #13 – February 15th. Final exam review.

Class #14 – February 20th. FINAL EXAM.