Credits: 4.0  
Time: Monday/Wednesday, 9:30-10:45 am  
Location: Zoom synchronous lectures while remote (link in course Gauchospace page). Bren 1424 while in person.  
Professor: Kyle Meng (kmeng@bren.ucsb.edu, website)  
Office Hour: Wednesday 4:15-5:00 pm. Zoom while remote (link in course Gauchospace page). Bren 4416 while in person.

COVID-19 circumstances  
Due to COVID-19 circumstances, this course will be taught remotely during the first few weeks of the quarter. The course will be in person when campus resumes in-person instruction.

The lectures will be synchronous. During the period of remote instruction, lectures will be recorded and uploaded on Gauchospace. Once instruction is back in person, lectures from this quarter will no longer be recorded. To accommodate students who are unable to attend class due to COVID-related quarantines, I will post last year’s recorded lectures from Winter 2021 onto Gauchospace as the class progresses. Because I change my material every year, these older lectures will not be a perfect substitute for my live lectures this quarter. However, these older lectures should help students keep up with the material if they have to miss in-person lectures due to a COVID quarantine.

Course Description  
Anthropogenic climate change presents some of the biggest challenges facing modern society. Economics can provide a powerful intellectual foundation for understanding and analyzing many of these challenges. This course employs insights and tools from economics to study problems around climate change impacts, the design of mitigation and adaptation policies, and the consequences of these policies. The course builds on key concepts from environmental and natural resource economics but also draws from other fields in economics. The quarter is broken into two sections. During the first half of the course, students will develop mastery of economic concepts relevant for climate change and acquire tools, both theoretical and empirical, for conducting economic analyses of climate impacts and policies. The second half of the course will hone students’ ability in applying these insights and tools through policy debates and a final paper and presentation. The goal is to help students become informed and critically-minded practitioners of climate policy.

Prerequisites and Workload  
Introductory microeconomics (ESM 251), environmental economics (ESM 204), and statistics (ESM 206) are required. Typically, this course is recommended only for 2nd year MESM students or 1st year MESM students with comparable prior coursework. Familiarity with statistics and modeling in R is preferred and will be developed throughout the course.

Expect about 5-6 hours of work per week. Preparation for each class will entail 2-3 reading assignments (~40 pages total) throughout the quarter. The first part of the course, lasting 7 weeks, will be on learning fundamental concepts related to the economics of climate change as well as acquiring analytical tools in numerical modeling and statistics to tackle related problems. In addition
to regular readings, this part of the course will contain 4 problem sets, each set apart by roughly 1 week, and an in-class midterm exam.

The second part of the course focuses on applying and honing the critical and analytical skills acquired from the first part. Remaining classes will be dedicated to Senate panel style debates in which I assign controversial prompts to randomly assigned opposing teams of students who must defend their position using economic concepts, reasoning, and evidence from the first part of the course. Student must prepare a written statement with supporting evidence in advance of their presentation.

**Readings**

Most readings will be academic journals. There is one required book for this course:


**Grading**

1) Problem sets (4x5): 20%
2) Midterm: 40%
3) Policy debate and report: 30%
4) Attendance/recent news summary: 10%. At the start of each lecture, I will randomly call upon 2-3 students to either summarize a reading required for that lecture or bring up a climate-related news story.

**Class Schedule**

Note: Holidays on 1/17 (MLK), 2/21 (President’s).

I. Intro and big-picture

**Date:** 1/3

**Readings:**

- Keohane and Olmstead, Chapters 1-3.

II. Optimal climate policy

**Dates:** 1/5, 1/10, 1/12

**Concepts:** economic efficiency, carbon abatement costs, social cost of carbon, discounting

**Tool:** integrated assessment model, numerical modeling in R

**Readings:**


Problem Sets:
1. Introduction to an Integrated Assessment Model of Climate Policy (due 1/18).
2. Optimal climate policy with an IAM (due 1/24).

III. Inequitable impacts of climate change
Dates: 1/19, 1/24
Concepts: adaptation and inequities in climate impacts
Tool: empirical estimation of climate damages, statistical models in R.
Readings:
• Dell M, Jones B, Olken B. What Do We Learn from the Weather? The New Climate-Economy Literature. Journal of Economic Literature. 2014. Sec. 2.1 and 4.1
• America’s Climate Prospectus, Chapters 5, 12, and 13.

Problem Set:
3. Estimating climate damages (due 1/31).

IV. National climate policy
Dates: 1/26, 1/31, 2/2, 2/7 (emissions trading simulation)
Concepts: externalities, cost effectiveness, carbon tax, cap-and-trade, induced innovation
Readings:
• Keohane and Olmstead, Chapters 5, 8, 9.
• ARE, Special Issue: California’s Climate Change Policy: The Economic and Environmental Impacts of AB 32—Notes from the Editors, 2010, up to page 15.

Problem Set:
4. Emissions trading simulation (due 2/14)

V. Climate policy and equity
Date: 2/9
Concepts: distribution of climate policy costs, environmental justice, residential sorting
Readings:

**VI. International climate policy**

**Dates:** 2/14, 2/16

**Concepts:** game theory, prisoner’s dilemma, free-riding

**Readings:**

- Bodansky et al. (2015). ”Facilitating linkage of climate policies through the Paris outcome” *Climate Policy*.

**VII. Midterm review and test**

**Dates:** 2/23 (review), 2/28 (test)

**VIII. Policy debates**

**Dates:** 3/2, 3/7, 3/9

**Academic Integrity**

Cheating of any sort will not be tolerated. Any form of cheating, or the facilitation of cheating by others, is grounds for immediate failure of the class. Honesty and integrity in all academic work is essential for a valuable educational experience. The Office of Student Conduct has policies, tips, and resources for proper citation use, recognizing actions considered to be cheating or other forms of academic theft, and students’ responsibilities, available on their website at: [https://studentconduct.sa.ucsb.edu](https://studentconduct.sa.ucsb.edu). Students are responsible for educating themselves on the policies and to abide by them. Furthermore, for general academic support, students are encouraged to visit Campus Learning Assistance Services (CLAS) early and often. CLAS offers instructional groups, drop-in tutoring, writing and ESL services, skills workshops and one-on-one consultations. CLAS is located on the third floor of the Student Resource Building, or visit [http://clas.sa.ucsb.edu](http://clas.sa.ucsb.edu)

**Academic support**

Disabled Students Program: Students with disabilities may request academic accommodations for exams online through the UCSB Disabled Students Program at [http://dsp.sa.ucsb.edu/](http://dsp.sa.ucsb.edu/). Please make your requests for exam accommodations through the online system as early in the quarter as possible to ensure proper arrangement. Managing stress / Supporting Distressed Students: Personal concerns such as stress, anxiety, relationships, depression, cultural differences, can interfere with the ability of students to succeed and thrive. For helpful resources, please contact UCSB Counseling & Psychological Services (CAPS) at 805-893-4411 or visit [http://counseling.sa.ucsb.edu/](http://counseling.sa.ucsb.edu/).

**Managing stress / Supporting Distressed Students**

Personal concerns such as stress, anxiety, relationships, depression, cultural differences, can interfere with the ability of students to succeed and thrive. For helpful resources, please contact UCSB Counseling & Psychological Services (CAPS) at 805-893-4411 or visit [http://counseling.sa.ucsb.edu/](http://counseling.sa.ucsb.edu/).