EC1340 Economics of Global Warming
Course Outline

Matthew A. Turner
Brown University
Fall 2022

Course objectives and requirements:

The problem of global warming can be described by a simple economic model. We face a trade-off between current consumption, future consumption, and future climate. We have preferences over consumption and climate and would like to choose our optimal climate/consumption bundle. This course is organized around filling in the details required to make this model useful, characterizing the optimal climate/consumption path suggested by the model, and finally, investigating policies to move us towards the optimal path.

 The first part of the course will be devoted to developing an understanding of the facts that confront us. The second part of the course will be devoted to solving for the optimal climate and consumption path. The third part of the course will investigate carbon mitigation policies.

 The course will require familiarity with microeconomics and basic calculus. In particular, I will assume you are familiar with the material from intermediate microeconomics and that you can solve univariate optimization problems. I will cover solution methods for more difficult problems in class. Students sometimes find the third part of the course a little more difficult, so if you are worried about the level of the course, be sure to look at the last two or three problems sets before you enroll.

Prerequisites:

The prerequisite for this course is ECO1110. If you have not taken this course, I am generally willing to waive the prerequisite for students with a technical background.

Course website:

The course website is at:

                 https://matthewturner.org/ec1340/eco1340_main.htm

This website is also where you will find supplementary readings, homework assignments and solutions, lecture notes, old exams and announcements. The schedule on this site provides a detailed schedule of the material to be covered during the term. You should check this schedule at least weekly for updates and changes.

Lectures:

There is a single section of this course. Lectures are in Smith-Buonanno Hall G01, MW 8:30-9:50. I will miss class on September 21, but do not anticipate other deviations from the regular schedule. I will announce any unforeseen changes to the schedule in class and on the course website.

Subject to changes in the public health environment, my intention is to record lectures and to make them available on Canvas *only* to students who are quarantining or ill.

Required Texts:

- Storms of My Grandchildren, J. Hansen, Bloomsbury, 2009. ($< 20\$$)

- A Question of Balance, W. Nordhaus, Yale University Press, 2008.($< 30\$$)

- The Collapse of Western Civilization, N Oreskes and E. Conway, Columbia University Press, 2014.($< 15\$$)

All three books should be available at the bookstore.

I will often refer to: The Economics of Climate Change: The Stern Review, N. Stern, Cambridge University Press 2008. An online version is available at this link:

> https://matthewturner.org/ec1340/readings/Sternreview_full.pdf

Office hours:

I will have office hours regularly during the term. For a schedule and location, please check this link:

> https://matthewturner.org/ec1340/office_hours.htm

You do not need to ask permission before coming to office hours or making an appointment.

I will try to maintain a regular schedule of office hours, but will occasionally need to deviate from this schedule. In this case, I will make a note at the link above. I encourage you to check before you come to my office.

By default, I will hold office hours in person. I will make arrangements for Zoom meetings if needed. Please email me after signing up for an office hour slot to arrange this.

I will also, usually, be available to talk after class.

The TAs for the course are Michael Lee and Arjun Nanda. Their office hour schedules will also be available at the link above.

Grading:

You should plan to attend class and you should expect to hand something in almost every week. There are approximately weekly problem sets along with a midterm and a final.

Weights assigned to each are as follows:

- Best 8 homework assignments 45%

- Midterm 20% (October 24, 2022, regular classroom)

- Final 35% (TBD, Finals period.)

I will collect problem sets through the course canvas site at

https://canvas.brown.edu/courses/1085716

Problem sets are to be handed in on canvas by midnight of the day they are due. I will post solutions shortly after class and so will not accept late problem sets. The marking scheme allows you to miss two assignments without penalty, so expect me to enforce this rule.

Over 14 weeks, students will spend 3 hours per week in class (42 hours total). Homework, reading, and studying for midterm examinations will take approximately 9.5 hours per week (133 hours total). In addition, there is a 2-hour final exam for which approximately 18 hours of review is assumed.

Email Policy:

I will try to reply to email within 24 hours, except on weekends. For me to be able to do this, I need some rules about email correspondence:

- Please look on the website to see if you can find an answer to your question before you write.

- Try to formulate questions that require short answers. If it takes more than a few sentences to answer, then the question is too hard for email. Please come to office hours instead.

- No emails about grading. Please come to office hours for this.

Academic misconduct:

Copying or plagarizing or other forms of academic misconduct will not be tolerated. Students caught engaging in these activities will be subject to academic discipline. The Brown University Academic code is here:

https://www.brown.edu/academics/college/degree/sites/brown.edu.academics.
college.degree/files/uploads/Academic-Code.pdf

Students with disabilities:

Please inform me if you have a disability or other condition that might require some modification of any of these course procedures. You may speak with me after class or during office hours.

Diversity and inclusion:

I intend to create a learning environment that supports and respects diversity of thought, perspective, experience, and identity. The field of economics not has traditionally been very good at this, and I am open to ideas for improvement.