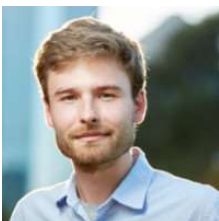




Georgetown
University

Environmental Economics
Economics 475
Fall 2022 – Syllabus

INSTRUCTOR INFO



Professor: Wes Austin, PhD
Please call me: Dr./Prof. Austin
Office: Zoom or MS Teams
Office hours: By appointment
Email: wes.austin@georgetown.edu



Professor: Bryan Parthum, PhD
Please call me: Dr./Prof. Parthum (“Par-thumb”)
Office: Zoom or MS Teams
Office hours: By appointment
Email: bryan.parthum@georgetown.edu

COURSE DESCRIPTION

This course will cover advanced theory and applications underlying environmental economics and examples from real-world scenarios. The foundations of microeconomic theory lie in the decisions of consumers and producers, but these decisions are often made under incomplete information or incomplete markets. We will first build an understanding of how markets fail, then continue with methods frequently used to measure these failures, and then we conclude with policy tools that are designed to correct the markets. The course relies on published literature for case studies and replication of approaches (done in the R programming language). The goal of this course is to establish a good understanding of environmental-economic issues and start to build a tool kit such that you will leave with the ability to contribute to discussions related to environmental policy by using economic theory and empirical methods.

LEARNING OBJECTIVES

- LO 1.** Explain the theoretical foundation of environmental economics.
- LO 2.** Identify several methods used to measure environmental benefits.
- LO 3.** Propose a method that could be used to correct a specific market failure.
- LO 4.** Describe the history of environmental policy and its outcomes.
- LO 5.** Assess the efficiency and unintended consequences of an environmental policy.

CONTACTING US

We will make class announcements and provide additional information to students through email (using your university email address). You can expect that we will respond to your emails within 48 hours. Office hours will be conducted virtually and must be arranged via email ahead of time.

COURSE MATERIALS

Textbook: Markets and the Environment; Keohane and Olmstead (K&O)
eTextbook: \$28.99 ; *Paperback (used)* \$9.95 – [Amazon link here](#)

We have carefully chosen a book that we believe does an excellent job of covering the underlying theory that will be discussed in this course at the best price we could find. This is the only required purchase for this course! The book will serve as a critical foundation for the topics we will cover, and it will not be possible to complete the course without it (or without reading it!). Other GU instructors have also used this book, so reach out to other students if needed, either edition (first/second) will work great! Please have the book available by the second week of classes.

The rest of the material will be distributed through the course website (Canvas). Things that will be posted include, but are not limited to, additional readings, videos, podcasts, homework assignments, and grades.

Recommended books for the interested reader. Not required and will not be used *directly* in the course, but the topics will be discussed. This is a list of books that we (your instructors) enjoyed reading and believe serve as great complements and extensions to the material we do cover. Read throughout the semester, or after:

1. [The Spirit of Green](#): The Economics of Collisions and Contagions in a Crowded World, by Bill Nordhaus (Nobel Prize in Economics, 2018)
2. [Small Is Beautiful](#): Economics as if People Mattered, by Ed Schumacher
3. [Governing the Commons](#), by Elinor Ostrom (Nobel Prize in Economics 2009)
4. [Toxic Communities](#), by Dorceta Taylor

GRADES

Grading will be three part:

- 1) Reflection Posts and Case Studies – 25%
- 2) Midterms (two) – 25% each (50% total)
- 3) Final Exam / Project – 25%

Your final grade will be the maximum of the averages of:

$$(1) + (2) \quad \text{or} \quad (1) + (3) \quad \text{or} \quad (1) + (2) + (3)$$

This means that if you do better (on average) on your midterms than on the final, your final will be dropped—and vice versa. **NOTE:** Light Posts and Case Studies will not be dropped.

Letter grades are as follows and are rounded to the nearest integer (i.e., 0.495 becomes 1):

A+ (95-100),	A (87-94),	A- (85-86),
B+ (82-84),	B (77-81),	B- (75-76),
C+ (72-74),	C (67-71),	C- (65-66),
D+ (62-64),	D (57-61),	D- (55-56),
F (0-55) – don't do this		

ACCOMMODATIONS

Any student who feels that they may require an accommodation in this course, based on the impact of a disability, should contact us as soon as possible to arrange for a meeting to coordinate all accommodations. Any student who wishes to contact Disability Support Services for information (<https://academicsupport.georgetown.edu/disability>).

COURSE CALENDAR

Readings and Videos: These are to be completed *before* class on the day they are listed. For example, K&O Ch. 2-3 should be read before coming to class on August 30th.

Homework: All homework assignments are due by Saturday and midnight on the week that they are listed. For example, Ref. Post #1 is due by Saturday, Sep 10th at midnight.

Midterms: Midterms will be on the Tuesday class of the week that they are listed.

Week	Date	Topic	Readings/Videos	Exams/ Homework
Module 1: How Markets Fail				
1	Aug 25	Recap of Economic Theory, Markets, and Willingness to Pay		Buy Textbook K & O: Ch. 1
2	Aug 30	Why Aren't Markets Perfect?	K & O: Ch. 2-3	
2	Sep 1	Market Failures: Examples and in Practice	K & O: Ch. 4-5	
3	Sep 6	Positive vs. Normative methods and their role in Environmental Economics	McGartland (2021) Cook (2022)	Ref. Post #1 (Due Sep 10) Podcast #1 or Podcast #2
Module 2: Measuring Environmental Benefits				
3	Sep 8	No class today. Instead, go to your regular Monday classes (follows Monday schedule)	No Class	
4	Sep 13	Econometrics, Treatment Effects, and their place in Environmental Economics	Video #1	Download and install Rstudio
4	Sep 15	Using Distance to Measure the Value of Public Land and Open Space (Travel Cost)	Brown and Mendelsohn (1984) Parthum and Christensen (2022)	
5	Sep 20	Voting with Your Feet – and Why it Doesn't Always Work (Hedonics)	Christensen and Timmins (2022)	Case Study #1 Treatment Effects (Due Sep 24)
5	Sep 22	Constructing Hypothetical Markets when They Don't Exist (Stated Preferences)	Choice Experiment	
6	Sep 27	Using Expenditures to Estimate Benefits of the Environment (Defensive Behavior)	Richardson et al. (2012)	
6	Sep 29	How Can We Estimate the Total Damages from Climate Change?	Nordhaus (2017) Rennert et al. (2022)	Case Study #2 DICE 2016 (Due Oct 8)
7	Oct 4	Incorporating the Environment into Economic Accounts (Natural Capital)	K & O: Ch. 11 Solow Monograph	
7	Oct 6	Review of Modules 1 and 2	Study Review Material	
8	Oct 11	Midterm Covering Material from Modules 1 and 2	Study!	Midterm #1

Week	Date	Topic	Readings/Videos	Exams/ Homework
Module 3: Environmental Policy and Regulation				
8	Oct 13	Economics of Environmental Regulation 1	K & O: Ch. 8	
9	Oct 18	Economics of Environmental Regulation 2	K & O: Ch. 9 Podcast #3	Case Study #3 - MATS (Due Oct 25)
9	Oct 20	Clean Air Act	Chay and Greenstone (2005) Hernandez-Cortes et al. (2022)	
10	Oct 23	Clean Water Act	Keiser and Shapiro (2019)	
10	Oct 25	Safe Drinking Water Act	Allaire et al. (2018) Pullen Fedinick et al. (2022)	Case Study #4 – PFAS NPDWR (Due Nov 3)
11	Nov 1	Comprehensive Environmental Response, Compensation, and Liability Act	Video #2	
11	Nov 3	Regulating Cars	Podcast #4	
12	Nov 8	Review of Module 3	Study Review Material	
12	Nov 10	Midterm Covering Material from Module 3	Study!	Midterm #2
Module 4: The Frontier of Environmental Economics and Policy				
13	Nov 15	Environmental Justice Analysis in Regulation	EJ Technical Guidance Ch. 2-4 Steam Electric Ch. 15	Ref. Post #2 (Due Nov 19)
13	Nov 17	Market-based Instruments in Practice	K & O: Ch. 10 Borenstein and Kellogg (2022)	
14	Nov 22	So, What's Next? Inflation Reduction Act, Bipartisan Infrastructure Law, and WV vs. EPA	K & O: Ch. 12 Video #3 Video #4	
14	Nov 24	No Class, Federal Holiday	No Class	
15	Nov 29	Review of Module 1 and 2	Final Study Guide I	
15	Dec 1	Review of Module 3 and 4	Final Study Guide II	
16	Dec 9- 17	FINALS WEEK	Study!	Final Exam