Environmental Economics (EC 434:534)

Emmett Saulnier
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Summary

When: Mon & Wed 4:00-5:20pm
Where: 101 LIB (map)
Who: Emmett Saulnier (instructor) | Eric Wilken (GE)
🎓 Doctoral Student in Economics | 🎓 Doctoral student in Economics
✉ emmetts@uoregon.edu | ✉ ewilken@uoregon.edu
⧗ Mon & Fri 10-11am (PLC 428) | ⧗ Tues 3-4pm & Thurs 10:30-11:30am (PLC 823)

Course description

How much is a polar bear worth? Is it good to buy locally? If reducing pollution is expensive, is it possible to have too little pollution? What is the best way to stop climate change? ...

If these questions interest you, you've signed up for the right course. Our goal is to explore the relationship between the economy and the environment. These two concepts are not in conflict, despite what you may have heard. Economics illuminates the importance of aligning individual incentives with societal outcomes. It, therefore, provides a powerful framework for understanding and correcting environmental problems and measuring environmental benefits. The environment, in turn, serves as a fundamental input or outlet for nearly all forms of economic activity. However, environmental goods and amenities aren't priced or traded like most market goods and amenities. Environmental economics thus brings us into direct contact with some of the most interesting cases of market failure and deviations from the perfect world of "economics 101". In this course, we'll explore how unregulated markets can fail in the environmental realm and the various policy tools that economists have developed to correct these problems. We'll also look at the techniques that economists use to measure environmental costs and benefits and how this can help society best allocate its scarce resources. By the end of the course, students should have developed a solid understanding of environmental economics theory and how this theory continues to shape effective environmental policies in the real world.

Prerequistes

Intermediate Microeconomics (EC 311), and one of Introductory Econometrics (EC 320) or Natural Resource Economics (EC 423). My working assumption is that you have a good understanding of basic calculus and econometrics.

Class rules and COVID-19 policy

COVID-19: The University of Oregon has very clear COVID-19 guidelines. I recommend reading the whole thing. But the three most important things from my perspective as your lecturer are:

1. Everyone is required to be fully vaccinated.

2. Masks are welcome

3. Do <u>not</u> come to lectures if you are unwell or have been exposed to COVID-19.

General: Apart from the COVID-19 stuff, I'll stick to some commonsense in-class rules. No laptops or cell phones during the lecture. A growing body of evidence shows that laptops are detrimental to your learning and the learning of those around you. Tablets are acceptable if that's what you're using to take notes or annotate the slides, so long as you use a stylus. I am happy to make exceptions in relevant cases, just ask.

I'd like to encourage an interactive and engaging classroom atmosphere. In-class participation will be rewarded, and you should expect me to call on you to answer questions and discuss ideas during lectures. I will treat you as adults and anticipate that you can engage with challenging or uncomfortable ideas accordingly. At the same time, discriminatory or egregiously inflammatory language will not be tolerated. Similarly, the university takes an appropriately hard-line policy on sexual discrimination and violence with which you should acquaint yourself.

Grade determination and protocol

Successful completion of the course will entail a mix of in-class participation and semi-weekly problem sets, as well as a midterm and final exam. EC 534 students will also be required to submit a research paper.

Grades will be determined as follows:

EC 434		EC 534	
Problem Sets	20%	Problem Sets	20%
Midterm	30%	Midterm	20%
		Research paper	20%
Final exam	50%	Final exam	40%

Note: A class participation bonus worth an additional 2.5% will be awarded at my discretion.

Please note that you are going to be graded on a curve. This means that the absolute scores or percentages from your midterm and final are largely irrelevant. What matters most is where you are in the distribution of scores among your peers. Your letter grades that I post at the end of the quarter will reflect this curve. These are the <u>only</u> criteria by which you will be graded. I will not consider any additional submissions/essays/tests/etc. to change your final grade.

Problem Sets

Problem sets will be assigned semi-weekly and will generally involve a mix of multiple choice and short answer questions. The goal is to reinforce concepts from the lectures; particularly the sections and examples that we work through together during class. (If you're wondering about the costs of missing class, this is one of them.) We will drop your lowest problem set score. **Note:** We will accept late problem sets up to 48 hours after the assignment due date, but will subtract 2 percentage points

from your grade for each hour that it is late. No assignments will be accepted after the solution key has been posted.

I will also award a class participation "bonus"—equivalent to one of the homework assignments—at my discretion. I'll explain this in more detail during our first lecture, but basically it will entail providing real-world examples of environmental news and topics related to the concepts that we cover during the course.

Midterm

The midterm will take place during week five. Please note that <u>no</u> make-up midterm will be given. If you know that you cannot take the midterm for valid, non-medical reasons (e.g. sports/athletic events), talk to me immediately. Failure to do so will result in a zero grade. If you miss the midterm due to medical reasons or last-minute emergencies, you will be required to provide proper documentation. If the documentation is acceptable, then the weighting for this section of the course will be placed on the final exam.

Research project (EC 534 only)

The enrolled MSc students have a choice between two types of final projects. You may work alone or in pairs. The main deliverable for this project is a paper between 5 and 7 pages long and an accompanying short presentation (7-10 minutes) of the paper to the class on **Monday, March 13th**. Your topic choices are:

- **Literature review.** You can do a literature review on up to 5 papers on an environmental, resource, or energy economics topic of your choice. Your goal will be to summarise the findings, find common threads, and work yet to be done in the area. My approval of your choice of papers is required before you start the literature review.

- **Data dive.** You can find a new dataset that we do not cover in class but appears useful for environmental economics research. Your goal is to describe the data, how you get them, how you use them, and what makes them relevant. You will also need to do some preliminary analysis on the data. My approval of your choice of dataset is required before you start the data dive.

Final exam

The final is scheduled for **2:45-4:45pm Tuesday, March 21st**. It will be a cumulative exam, i.e. covering the entire syllabus. Make-up final exams will be allowed in the case of documented emergency and advanced notice. Missing the final exam without a documented emergency and advanced notice will result in a zero grade. If you know now that you cannot make this exam, do not register for the class.

Both the midterms and final exam will be closed notes, closed book. Acceptable items are limited to: pens/pencils and a straight-edge for the final exam, and non-programmable, non-cell phone based hand-held calculators.

Lecture notes, textbook(s) and other readings

Teaching an environmental economics course for upper undergraduates is complicated by the fact that there is no ideal textbook aimed at this level. Lecture slides will thus be "self-contained", in the sense that you won't require additional textbook material to pass the course. I will make these slides available on Canvas ahead of class. However, please note that the slides will <u>not</u> be entirely complete: I'll save some of the most important material for the actual lecture, where we'll work

through these missing sections together in real time. You will need to take your own notes here and will only be able to do so if you actually attend the lecture.

While I won't be prescribing any textbook, there are several options out there for motivated students who want to deepen their understanding of environmental economics. Here are two that you might consider. Both should be available at the Duck Store, or can be loaned from the Knight Library.

- "Markets and the Environment" (2nd edition) by Keohane and Olmstead (K&O). I'm a big fan of this book. It does an excellent job of conveying the intuition of environmental economics and discusses a bunch of interesting case studies. It's also pretty cheap and has proven popular with students in the past.

- "Environmental and Natural Resource Economics" (11th edition) by Tietenberg and Lewis (T&L). Another well-regarded textbook that provides a solid, if superficial, introduction to the field.

Honesty and academic integrity

Students caught cheating or plagiarizing will automatically be assigned a zero grade. Please acquaint yourself with the Student Conduct Code at http://studentlife.uoregon.edu.

Accessibility

If you have a documented disability and anticipate needing accommodations in this course, please make arrangements with me during the first week of the term. Please request that the Accessible Education Center send me a letter verifying your situation.

Concerns regarding 500-level instruction/evaluation by GE instructor of record

Any concerns that a graduate student may have regarding conflict of interest, privacy concerns, unfairness related to having a GE in an instructional/evaluative role, and so forth should be directed toward Professor Van Kolpin (associate department head). Professor Kolpin can be contacted at vkolpin@uoregon.edu.

Course outline

Date	Topic	Text (chapters)
Jan 9	Review: Basic calculus and welfare analysis	
Jan 11	Economic efficiency and property rights	K&O (1, 4); T&L (1, 2)
Jan 16	MLK Holiday: No class	
Jan 18	Externalities and market failure	K&O (5); T&L (2)
Jan 23	Evaluating trade-offs: Cost-Benefit Analysis & co.	K&O (3); T&L (3)
Jan 25	Non-market valuation: 1) Stated preference methods	K&O (3); T&L (4)
Jan 30	Non-market valuation: 2) Revealed preference methods	K&O (3); T&L (4)
	Research paper topic (EC 534 only)	
Feb 1	Pollution control: 1) Pigouvian policy	K&O (8, 9); T&L (14)
Feb 6	Pollution control: 2) Tradeable permits	T&L (14); K&O (8, 9)
Feb 8	**MIDTERM**	
Feb 13	Stationary-source air pollution	T&L (15); K&O (10)
Feb 15	Mobile-source air pollution	T&L (17)
Feb 20	Climate change: 1) Discounting	K&O (10); T&L (16)
Feb 22	Climate change: 2) Damages	T&L (16)
Feb 27	Trade and the environment	K&O (11); T&L (20)
Mar 1	Water pollution	K&O (9, 10); T&L (18)
Mar 6	Environmental Justice	
Mar 8	Frontiers of environmental economics	
	Research paper deadline (EC 534 only)	
Mar 13	Research paper presentations	
Mar 15	Overview and exam prep	
Mar 21	**FINAL EXAM 2:45pm**	