Environmental Economics (EC 434:534)

FALL 2024 SYLLABUS

Emmett Reynier
Department of Economics, University of Oregon

Summary

When: Tues & Thurs 4:00-5:20pm
Where: Lillis 112 (map)

Who: Emmett Reynier, instructor (he/him)
Doctoral Candidate in Economics
emmetts@uoregon.edu
Mon & Fri 10-11am on Zoom
or by appointment in PLC 428

Connor Mulholland, GE
Doctoral student in Economics
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TBD

Course description

What is the economic value of a clean river or a reduction in greenhouse gas emissions? How do we design policies to tackle climate change while minimizing economic costs? What role do markets play in environmental degradation, and how can they be leveraged to improve environmental outcomes?

In this course, we will explore the intersection of economics and environmental policy. You'll learn how economic theory applies to environmental issues, examining both the causes of environmental problems and the potential solutions. We'll cover topics like externalities, public goods, and the valuation of environmental goods and services. Additionally, we'll analyze various policy instruments, including taxes, subsidies, and market-based mechanisms like cap-and-trade, that economists use to address environmental challenges. By the end of the course, students will have developed a solid foundation in environmental economics, gaining insights into how economic tools can be applied to create effective, equitable, and efficient environmental policies. Expect to leave with a better understanding of both theoretical concepts and their practical applications in the real world.

Course Structure

Successful completion of the course will entail a mix of in-class participation, semi-weekly problem sets, midterm and final exams, and a research project. More details on each of these are below.

Grades

We will return grades on all submitted material within one week from its due date. 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 only criteria by which you will be graded. I will not consider any additional submissions/essays/tests/etc. to change your final grade.

EC 434		EC 534	
Research paper	30%	Research paper	40%
Final exam	30%	Final exam	20%
Midterm	20%	Midterm	20%
Participation	10%	Participation	10%
Problem Sets	10%	Problem Sets	10%

Note: A class participation bonus worth an additional 2.5% may be awarded, see description below.

Lectures

We will meet for 18 lectures (twice per week, minus the midterm and Thanksgiving). I will post lecture slides on Canvas ahead of time. These slides are designed to be self-contained, meaning they will cover everything you need to succeed in the course. However, they will not be fully complete; I reserve some of the key material for the in-class lecture, where we will work through it together. This is to encourage active participation, note-taking, and deeper understanding. You'll need to be present in class to capture this content and benefit from our discussions.

I expect you to be engaged during each lecture. This means asking questions when something is unclear and contributing to class discussions. Engaged students help create a more dynamic and enjoyable learning environment, so don't hesitate to share your thoughts or ask for clarification. Participation will be rewarded in two ways:

- 10% of your grade is based on class participation. For every class you attend and are actively engaged in, you'll earn 1 percentage point (up to a maximum of 10 points).
- You can also earn a 2.5%pt bonus by bringing in a current news article that connects with a topic we're discussing. This is a great way to link classroom concepts to real-world events, and I encourage you to take advantage of it.

Attendance Policy In-person attendance is important for your learning in this class! However, **you do not need to tell me if you are missing a particular lecture**—by only requiring you to participate in 10 classes, I am equitably distributing the ability to miss class in case of an emergency. Please do not come to class if you are sick. We do not have "excused" or "unexcused" absences except—as is the case for all UO classes—in the cases of religious observances, specific AEC accommodations, military deployment, and University-sponsored events with signed documentation presented as early in the term as possible but at least a week ahead of the planned absence or need for accommodation.

Problem Sets

There will be four problem sets throughout the term. These problem sets are designed to give you the opportunity to practice the types of problems that you will see on the midterm and final exam, and to reinforce concepts from the lectures; particularly the sections and examples that we work through together during class.

All problem sets will be posted as assignments on Canvas. You are welcome to hand-write or type your answers, but will be required to submit your assignments on Canvas as a **.pdf** or **.html** file. We will drop your lowest problem set score. 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.

Examinations

The midterm exam is **Thursday, October 31st**. Please note that no 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 a medical or last-minute emergency, then the weighting for this section of the course will be placed on the final exam.

The final exam is **Monday, December 9th at 12:30pm** (as scheduled by the university). It will be a cumulative exam, i.e. covering the entire syllabus. Make-up final exams will be allowed in the case of an emergency with advanced notice. Missing the final exam without 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.

Research project

You have a choice between two types of research projects, to be completed in groups of 3 to 4 **for 434 students** or alone **for 534 students**. 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 **Tuesday, December 3rd**. 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.

You should be making consistent progress on the project throughout the term. There will be several project milestones along the way to help you with this. See Canvas for more details about the project.

Textbooks

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" (2^{nd} 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" (11^{th} edition) by Tietenberg and Lewis (T&L). Another well-regarded textbook that provides a solid, if superficial, introduction to the field.

Course Policies and Expectations

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.

Communication

Any information that I need to tell the whole class (e.g. posting a problem set), I will send via an announcement in Canvas. Make sure you check your notification settings to ensure that you see these in a timely manner. Individual communication with students will be through email.

If you have...

- **A practical yes/no type question** about an assignment, lecture, or other component of our class, please ask it via the "Class Question and Answers" discussion on Canvas. Students often have the same questions, and so this can be a resource for you to get answers quicker. I will monitor the discussion regularly, but answer yourself if you see an unanswered question you know the answer to! Remember to be respectful of your peers in any responses.
- **A technical question about Canvas**, please contact the UO Service Portal.
- **A question about course content or activities, about something personal, time sensitive, or something else** that doesn't feel like it fits above, please reach out to me by email or by attending office hours! I welcome meetings outside my regular office hours as well, just email me to set a time.

I encourage you to reach out whenever you have questions! Whether it's clarifying course material, connecting what we discuss in class to current events, or exploring how the field of environmental economics can shape your career, I'm here to help. My goal is to create a welcoming environment where you feel comfortable discussing any challenges or curiosities you have. Whether you're seeking advice on course topics, curious about applying concepts to real-world situations, or looking for career guidance, my door is always open.

During office hours, students bring in a wide range of concerns, questions, and successes. We might talk through a specific concept or problem to clarify it, might think together about an issue a student is curious about that relates to the class, might discuss a student's post-graduation goals, might identify more effective ways to study for a future exam or to begin a project, or any number of other topics. Some students have never been to an instructor's office hours—if that is you, please change that this term by attending! Feel free to come with a peer if that is useful for you.

Respect for Diversity

You can expect to be treated with respect in this course. Both students and your instructors enter with many identities, backgrounds, and beliefs. Students of all racial identities, ethnicities, genders, gender identities, gender expressions, national origins, religious affiliations, sexual orientations, citizenship statuses, ability and other visible and non-visible differences belong in and contribute

to this class and this discipline. All students are expected to contribute to a respectful, welcoming and inclusive environment for every other member of the class.

Class rosters are provided to instructors with students' legal names. Please let me know if the name or pronouns I have for you are not accurate. It is important to me to address you properly.

Please let me know if aspects of the instruction, course design, or class activities undermine these principles in any way. For additional assistance and resources, you may consider contacting the Division of Equity and Inclusion through their website or by phone at 541-346-3175, or the Center for Multicultural Academic Excellence through their website or by phone at 541-346-3479.

Generative AI

Students may use Generative AI tools in this class to help with course work and assignments. However, if you include in your assignment submissions any content that is generated by GenAI, you must cite the GenAI tool that is your source. Be advised that GenAI suggestions or content can be inaccurate, incomplete or otherwise problematic; using GenAI can impact negatively the quality of your work and your grades.

Honesty and academic integrity

The University Student Conduct Code defines academic misconduct, which includes using unauthorized help on assignments and examinations, the use of sources without acknowledgment, and recording class without "the express written permission of the instructor." Academic misconduct is prohibited at UO. I will report all suspected misconduct to the Office of Student Conduct and Community Standards. If the Office finds a student has committed misconduct, consequences can include failure of the relevant assignment or exam, or of the course.

I encourage you to work together to understand the material in this course—however, problem set answers must be written in your own words.

Access and Accommodations

The University of Oregon and I are dedicated to fostering inclusive learning environments for all students and welcomes students with disabilities into all of the University's educational programs. The Accessible Education Center (AEC) assists students with disabilities in reducing campus-wide and classroom-related barriers. If you have or think you have a disability and experience academic barriers, please contact the AEC to discuss appropriate accommodations or support. Visit 360 Oregon Hall or aec.uoregon.edu for more information. You can contact AEC at 541-346-1155 or via email at uoaec@uoregon.edu.

The University of Oregon respects the right of all students to observe their religious holidays, and will make reasonable accommodations, upon request, for these observances. If you need to be absent from a class period this term because of a religious obligation or observance, please fill out the Student Religious Accommodation Request fillable PDF form and send it to me within the first weeks of the course so we can make arrangements in advance.

Your well being

Life at college can be very complicated. Students often feel overwhelmed or stressed, experience anxiety or depression, struggle with relationships, or just need help navigating challenges in their life. If you're facing such challenges, you don't need to handle them on your own–there's help and support on campus.

As your instructor if I believe you may need additional support, I will express my concerns, the reasons for them, and refer you to resources that might be helpful. It is not my intention to know the

details of what might be bothering you, but simply to let you know I care and that help is available. Getting help is a courageous thing to do—for yourself and those you care about.

University Health Services helps students cope with difficult emotions and life stressors. If you need general resources on coping with stress or want to talk with another student who has been in the same place as you, visit the Duck Nest (located in the EMU on the ground floor) and get help from one of the specially trained Peer Wellness Advocates.

University Counseling Services (UCS) has a team of dedicated staff members to support you with your concerns, many of whom can provide identity-based support. All clinical services are free and confidential. Find out more at counseling.uoregon.edu or by calling 541-346-3227 (anytime UCS is closed, the After-Hours Support and Crisis Line is available by calling this same number).

Academic Disruptions

In the event of a campus emergency that disrupts academic activities, course requirements, deadlines, and grading percentages are subject to change. Information about changes in this course will be communicated as soon as possible by email and on Canvas. If we are not able to meet face-to-face, students should immediately log onto Canvas and read any announcements and/or access alternative assignments. Students are also expected to continue coursework as outlined in this syllabus or other instructions on Canvas.

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 Jiabin Wu (associate department head). Professor Wu can be contacted at jwu5@uoregon.edu.

Acknowledgements

Thank you to Grant McDermott for passing along his materials for this course.

Course outline

Here is a **tentative** schedule for the term.

Date	Topic	Text (chapters)
Oct 1	Review: Basic calculus and welfare analysis	
Oct 3	No in-person class—see Canvas instructions.	
Oct 8	Economic efficiency and property rights	K&O (1, 4); T&L (1, 2)
Oct 10	Externalities and market failure	K&O (5); T&L (2)
Oct 15	Evaluating trade-offs: Cost-Benefit Analysis & co.	K&O (3); T&L (3)
Oct 17	Non-market valuation: 1) Stated preference methods	K&O (3); T&L (4)
Oct 22	Non-market valuation: 2) Revealed preference methods	K&O (3); T&L (4)
Oct 24	Pollution control: 1) Pigouvian policy	K&O (8, 9); T&L (14)
	Research paper topic	
Oct 29	Pollution control: 2) Tradeable permits	T&L (14); K&O (8, 9)
Oct 31	**MIDTERM**	
Nov 5	Stationary-source air pollution	T&L (15); K&O (10)
Nov 7	Mobile-source air pollution	T&L (17)
Nov 12	Climate change	K&O (10); T&L (16)
Nov 14	Trade and the environment	K&O (11); T&L (20)
Nov 19	Water pollution	K&O (9, 10); T&L (18)
Nov 21	TBA Guest Speaker (on Zoom)	
Nov 26	No class—Thanksgiving	
Nov 28	Environmental Justice	
	Research paper deadline	
Dec 3	Research paper presentations	
Dec 5	Practice problems	
Dec 9	**FINAL EXAM 12:30pm**	