

AEC/ECON 352: ENVIRONMENTAL ECONOMICS AND POLICY

Spring 2019 TR 2:00 – 3:20 302 Learning Innovation Center

Professor

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Teaching Assistant

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Course Catalog Description

This course provides an overview of the interrelationships between economic activity, the environment, and public policy. Through case studies, discussion groups, readings, and group activities, students learn how economists define and analyze environmental problems and the types of policies they advocate for managing environmental quality.

Prerequisites: AEC 250 or ECON 201 or ECON 201H (Bacc. Core Course)

Course Objectives

The focus of this course is the application of basic economic tools to understand and evaluate environmental issues and policies. The course will introduce concepts such as externalities, property rights, open access resources, non-market goods and public goods. We will use the economic foundation developed in this course to discuss current policy issues including global climate change, reducing the costs of regulations, and dealing with point and non-point source pollution.

My objectives for this course are to:

- Provide students with a clear understanding of how to apply economic theory to issues of the environment.
- Introduce students to the theory, empirical findings, and important policy implications of environmental economics and policy at a level appropriate for advanced undergraduate students.
- Increase students' ability to define environmental problems and analyze information.

Learning Outcomes

Upon successful completion of this course, a student will be able to:

- Recognize how economics can inform and improve environmental policy.
- Apply principles of economics to the environment.
- Understand the concepts of market equilibrium, market failure, and externalities.
- Analyze environmental issues within a graphical economic modeling framework.
- Compare and evaluate the effectiveness of alternative policy solutions to environmental problems.
- Increase their ability to define environmental problems and analyze information.

This course fulfills the Baccalaureate Core requirement for the Contemporary Global Issues category. It does this by teaching students about the interdependencies between social, economic, political, and environmental issues and how economics can be a common language to discuss and critically evaluate environmental problems and propose solutions. The scale of environmental issues (i.e., global) and the myriad of disciplines involved necessitate that students acquire an understanding of the dimensionality of these problems from both global and multidisciplinary perspectives, as well as a fundamental disciplinary knowledge of how economists approach quantifying and solving these complex problems. Upon successful completion of this Baccalaureate Core *Synthesis* course, a student will be able to:

- 1) Analyze the origins, historical contexts, and implications of contemporary global issues.
- 2) Explain the complex nature and interdependence of contemporary global issues using a multi-disciplinary approach.
- 3) Articulate in writing a critical perspective on contemporary global issues using evidence as support.

Learning Resources

Required Text:

Markets and the Environment, Second Edition (2016)

Authors: Nathaniel Keohane and Sheila Olmstead (Island Press, Washington, DC).

New copies are available at the bookstore and Amazon. Lectures and discussion in class use this textbook as a foundation; however, the book does not contain ALL the material needed to master this course. Lecture notes and additional readings will contain more information than the textbook and you are responsible for this material as well. All additional required readings are posted as PDF files on the course's Canvas site.

Other Resources:

Environmental Economics (5th, 6th, or 7th Editions)

Authors: Barry C. Field and Martha K. Field (McGraw Hill, New York)

This book is a good supplementary resource for learning the material covered in this course.

Additional course content is available via Canvas. The course Canvas site contains the syllabus, lecture notes, additional readings, and problem sets. The course Canvas site is also where course participants may communicate with other course participants to discuss course topics and assignments.

Please note: Assigned readings are essential to your success in this course.

Evaluation

Your final grade will depend on the following:

| | |
|---------------------------------------|------------|
| Mid-term Exam | 30% |
| Final Exam (Cumulative) | 35% |
| Problem sets (4 @ 6.25 % each) | 25% |
| In-class assignments/quizzes | 10% |

The following scale will be used in assigning final grades:

| | |
|------------|--------------|
| A: 93-100% | C: 73-76% |
| A-: 90-92% | C-: 70-72% |
| B+: 87-89% | D+: 67-69% |
| B: 83-86% | D: 63-66% |
| B-: 80-82% | D-: 60-62% |
| C+: 77-79% | F: below 60% |

I reserve the right to adjust/curve the final grades if this is deemed necessary.

Exam Dates

Mid-term Exam

Thursday, May 9th, 2019

Final Exam

Wednesday, June 12th, 2019 @ 9:30 AM

Exams in this course are a combination of short answer writing responses, graphical analysis and multiple choice questions and are designed to meet both the learning outcomes for this course and the Baccalaureate Core *Synthesis* learning outcomes 1) and 2).

You should not miss any exams. No programmable calculators or cell phones will be allowed during exams. **Makeup exams are given only under extraordinary circumstances.** The following must occur in order for a makeup exam to be administered: (1) you must contact me **prior** to the exam to let me know you will not be attending and the reason why; (2) the makeup exam must be taken **before** the in-class exam is returned to students (i.e., within 48 hours); and (3) a written excuse from a doctor or Student Health Services must be presented (and this will be verified by a follow-up phone call). **You may not miss or reschedule the final exam under any circumstances.**

Problem Set Due Dates

| | |
|---|--|
| Problem Set #1: Externalities, Public Goods & Open Access Resources | Thursday, April 25th |
| Problem Set #2: Public Solutions to Market Failures | Thursday, May 2nd |
| Problem Set #3: Coase Theorem & Benefit-Cost Analysis | Thursday, May 23rd |
| Problem Set #4: Non-Market Valuation | Tuesday, June 4th |

Problem sets are **due at the beginning of class** on the dates specified above.

Problem sets in this course are a combination of graphical analysis and evidence-based writing assignments and are designed to meet both the learning outcomes for this course and the Baccalaureate Core *Synthesis* learning outcomes 1), 2) and 3).

Late Assignments will NOT be accepted. In other words, please do not expect to receive partial credit if you attempt to turn in an assignment after it is due.

I encourage you to work with your fellow classmates on these assignments, but **you must turn in your own work.** It is in your best interest to show all of your work on these assignments. For example, if the answer is 5 and all you write down is 4, you lose all points for that problem. But if you show your work and I can see that you understood the problem but made a simple math mistake, you will still receive credit. All problem sets are required to be **stapled** together. This prevents the possibility of losing pages and makes grading much easier.

In-Class Assignments/Quizzes

Six to eight (6-8) in-class assignments/quizzes will be given in class at random throughout the quarter. There are no makeup opportunities for missed in-class assignments.

In-class assignments in this course are group activities (min 2, max 5 people per group) that are a combination of short answer writing responses and graphical analysis and are designed to meet both the learning outcomes for this course and the Baccalaureate Core *Synthesis* learning outcomes 1) and 2).

Please note: I DO NOT offer extra credit opportunities on an individual basis, so please do not ask. If you are struggling with the course material, make the effort to come see me during office hours or make an appointment sooner rather than later.

Course Policies

The University's academic regulations are located here:

<https://catalog.oregonstate.edu/regulations/>

I have scheduled open office hours each week and I am also available by appointment subject to my availability. The course teaching assistant also offers two times per week for office hours. **Individual office visits may be one of the most productive parts of the course for you if you are struggling with the material.** Don't forget...we are here to help.

Class attendance is not a required element for your course grade; however, you are responsible for all material covered in class, regardless of whether you decide to attend. If you miss a class, you will need to get the notes from a classmate. Additionally, unscheduled in-class assignments/quizzes will be given throughout the quarter so unexcused absences have the potential to harm your final grade. In terms of classroom etiquette, please turn any unnecessary electronic devices off and keep them off of your desk. I expect you to engage in class – or at the very least, you should not be a distraction by being rude.

Statement Regarding Students with Disabilities

Accommodations for students with disabilities are determined and approved by Disability Access Services (DAS). If you, as a student, believe you are eligible for accommodations but have not obtained approval please contact DAS immediately at 541-737-4098 or at <http://ds.oregonstate.edu>. DAS notifies students and faculty members of approved academic accommodations and coordinates implementation of those accommodations. While not required, students and faculty members are encouraged to discuss details of the implementation of individual accommodations.

Expectations for Student Conduct

Participants are expected to conduct themselves in compliance with the university's regulations regarding civility. <http://studentlife.oregonstate.edu/code>

Student Evaluation of Courses

The online Student Evaluation of Teaching system opens to students from May 29 through June 9, 2019. Students will receive notification, instructions and the link through their ONID. They may also log into the system via Online Services. Course evaluation results are extremely important and used to help improve courses and the learning experience of future students. Responses are anonymous (unless a student chooses to "sign" their comments agreeing to relinquish anonymity) and unavailable to instructors until after grades have been posted. The results of scaled questions and signed comments go to both the instructor and their unit head/supervisor. Anonymous (unsigned) comments go to the instructor only.



General Course Outline

This is a general course outline and subject to additions and subtractions. “KO” in the outline below refers to the required text. All other reading are available as PDF files on the Canvas site.

Section 1: What is Environmental Economics?

- KO: Preface and Chapter 1
- Fullerton, D. and R. Stavins. 1998. How Economists see the Environment. *Nature*, 395: 433-434.
- Rescuing Environmentalism. Commentary, *The Economist*. April 23rd, 2005.

Section 2: How Markets Work

- KO: Chapter 4
- Tietenberg. T. *Property Rights, Externalities, and Environmental Problem*, p. 62-67.

Section 3: Externalities

- KO: Chapter 5, pp 80 – 85.
- Harris, J.M. *The Theory of Environmental Externalities*, p. 39-49
- Parry, I.W.H. 2002. Is Gasoline Under-Taxed in the United States? *Resources*, 148: 83-87.
- Dubner, S. and S. Levitt. *The Trouble with Negative Externalities*, New York Times, April 20, 2008.

Section 4: Public Goods & Open Access Resources

- KO: Chapter 5, pages 85 – 98.

Section 5: Pollution Control Model

- KO: Chapter 2, pages 11 – 30

Section 6: Public Solutions to Externalities: Standards, Taxes and Permits

- KO: Chapter 8, pages 143 – 167, Chapter 9, and Chapter 10
- Cap-and-Trade Program Summary for California
- Parry, I.W.H. 2007. Should we abandon Cap and Trade in Favor of a CO2 Tax? *Resources*, p. 6-10.
- Stavins, R.N. 2005. Lessons Learned from SO2 Allowance Trading. *Choices*, 20(1): 53-57.
- Jaffe, E. *Is a VMT Tax a Good Idea?* August 24, 2012.

Section 7: Private Solutions to Externalities: The Coase Theorem

- KO: Chapter 8, pp. 139 – 143

Section 8: Benefit-Cost Analysis

- KO: Chapter 2, pp. 30 – 34, Chapter 3, pp. 55 – 68
- Boardman, A.E. et al. *Introduction to Cost-Benefit Analysis*, p. 1-17.
- Goulder, L.H. and R.N. Stavins. 2002. An Eye on the Future. *Nature*, 419: 673-674.

Section 9: Non-Market Valuation

- KO: Chapter 3 pp. 35 – 55
- Carson, R. et al. 2003. Contingent Valuation and Lost Passive Use: Damages from the Exxon Valdez Oil Spill. *Environmental and Resource Economics*, 25: 257-286.
- Portney, P.R. 1994. The Contingent Valuation Debate: Why Economists Should Care. *Journal of Economic Perspectives*, 8(4): 3-17.
- Arrow, K. et al. 1993. Report of the NOAA Panel on Contingent Valuation.
- Brannon, I. 2005. What is a Life Worth? *Regulation*, p. 60-63.

Sections 10 and 11: Special Topics

- To be determined by class interests