

Natural Resource Economics
AAE/ENVIR ST 244
Environment and the Global Economy
Spring 2021

Instructor:

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Virtual (synchronous) Class Meetings:

Lectures: Tuesdays and Thursdays, 2:30 – 3:45 p.m.
Discussions: Fridays, various times

Office Hours:

Professor: Wednesdays 2 to 3 pm and by appointment.
TA: Thursday, 4 to 5 pm

Class Website:

We will use Canvas for links to class meeting and office hours on Zoom. Check regularly within module folders for announcements, readings, assignments, etc.

Course Description:

This introductory course will familiarize students with the way in which economists think about the environment. We will examine how economists define environmental problems, and what they diagnose to be their source. We will investigate solutions, examining market-based and regulatory approaches.

The course will be designed around topic-oriented modules. We will focus on major global environmental challenges related to climate change, wildlife conservation, deforestation and land conversion, fisheries depletion, and agriculture and water use. In the context of these topics, students will learn the language of economics. Important examples of this language include *the law of demand*, *consumer surplus*, *economic efficiency*, *open access*, *public goods*, and *externality*. My goal is to engage interest in two dimensional graphs and algebraic manipulations by demonstrating how these tools help us understand environmental problems and their solutions.

Environment and the Global Economy is a class rooted in economic theory so you can expect some diagrams, abstractions, and simplifications. But the purpose of the theory is always to help us understand the real world. Economics will not provide us with “the right answer”, but it will give us an important analytical framework for thinking about important environmental problems.

Note: Because there are no economics prerequisites for this course, I will assume that students have not had exposure to economics. You may be bored with some of the material if you have already taken AAE 343 or AAE 246.

Course Learning Objectives:

Successful students will

- use appropriate tools to analyze how markets and governmental policies affect the use and conservation of natural resources;
- explain the social, economic, and/or environmental dimensions of the sustainability challenges of balancing healthy global economies with environmental quality;
- analyze the causes of and solutions for the sustainability challenges of maintaining environmental quality and healthy economies.

Useful Texts:

Wheelan, Charles. 2010. *Naked Economics: Undressing the Dismal Science*. W.W. Norton & Company, New York.

Mankiw, N. Gregory. 2007. *Principles of Economics*. South-Western.

Field, Barry C. 2008. *Natural Resource Economics: An Introduction*. Waveland Press.

Supplementary Readings:

There will be several supplementary readings; these will be a mix of academic journal articles, textbook chapters, newspaper blogs, and short policy essays.

Grading:

| | |
|--------------------------------|----------------|
| Quizzes: 10 @ 10 points | 100 pts |
| Discussion Problem: 10 @ 2 pts | 20 |
| <u>Final exam</u> | <u>40</u> |
| Total | 160 pts |

Discussion Problems:

We will hand out discussion problems at the beginning of most weeks. You will be asked to interpret and draw graphs, solve math problems, and critically assess readings from the course. The discussion sections on Fridays will offer opportunities to work on solving the problems with TA guidance. You will be asked to submit your answer to one question (of our choosing) to the TA on Friday mornings. This question will be graded for a maximum of 2 points.

Quizzes:

There will be 11 quizzes, given most weeks at the end of a module, on Monday. The quizzes may contain technical problems and short-essay questions about assigned readings. You may be required to solve mathematical problems and interpret graphs. I have scheduled 11 quizzes, but I will drop your ~~two~~ lowest scores so that only your 10 best quizzes will count towards your final grade. I will not allow makeup quizzes unless there is a compelling reason.

Exam:

There will be an open-note, comprehensive final exam. Your grade will depend on how well you demonstrate both intuitive and technical understanding of course concepts. Because the final exam is comprehensive, your grade will be largely determined by how well you demonstrate an understanding of the major punchlines and concepts.

Academic Honesty:

I will not tolerate cheating. If I catch you cheating on a quiz or exam, then you will receive zero credit for the quiz or exam. I may also pursue harsher penalties through the University.

Guidelines for Doing Well in the Class:

- *Attend all classes* – quizzes, problem sets, and exams focus on material discussed in class, and some of the lecture material will not come from the readings.
- *Keep up with reading* – be “on same page” – or at least on same chapters.
- *Devote necessary time* – the typical student should devote 2-3 hours reading, doing assignments, and/or reviewing notes for each hour of class.

TENTATIVE SCHEDULE (Subject to Change)

| Week | Module | Topics | Notes |
|--------------------|--------|--|---------------------------------|
| 1 (Jan. 25 -29) | 1 | Course overview; Tradeoffs, markets & the environment | No sections on Friday |
| 2 (Feb. 1 -5) | 1 | Tradeoffs, markets & the environment | F: Problem 1 Due |
| 3 (Feb. 8 -12) | 2 | Climate change: market failure & discounting | M: Quiz 1 F: Problem 2 Due |
| 4 (Feb. 15-19) | 2 | Climate change: incentives and fossil fuel use | M: Quiz 2 F: Problem 3 Due |
| 5 (Feb. 22 -26) | 2 | Climate change: government failure & coordination challenges | M: Quiz 3 F: Problem 4 Due |
| 7 (March 1- 5) | 3 | Land and Forest Use and Conservation | M: Quiz 4 F: Problem 5 Due |
| 8 (March 8 -12) | 3 | Land and Forest Use and Conservation | M: Quiz 5 F: Problem 6 Due |
| 9 (March 15 -19) | 4 | Wildlife Use & Conservation | M: Quiz 6 F: Problem 7 Due |
| 10 (March 22 -26) | 4 | Wildlife Use & Conservation | M: Quiz 7 F: Problem 8 Due |
| 11 (Mar 30 -Apr 2) | 5 | Marine Resources | No sections on Friday |
| 12 (April 5 -9) | 5 | Marine Resources | M: Quiz 8 F: Problem 9 Due |
| 13 (April 12 -16) | 6 | Agriculture, Water Use & Conservation | M: Quiz 9 F: Problem 10 Due |
| 14 (April 19- 23) | 6 | Agriculture, Water Use & Conservation | M: Quiz 10 F: Problem 11 Due |
| 15 (April 26 -30) | | Catch up and review | M: Quiz 11 |
| 16 (May 3 - 7) | | Comprehensive final exam | |