

Course Syllabus

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- **Instructor:** Rob Hicks
- **Office:** 252 Chancellors Hall
- **Term:** Spring 2023
- **E-mail:** rob.hicks@wm.edu
- **Class Time:** MW 5:00-6:20 pm
- **Class Room:** 123 Chancellors Hall

Course Summary

This course covers economic approaches for addressing environmental and natural resource problems. In this course we will investigate the interaction between economic decisions made by firms or consumers and the environment. The main topic areas are as follows:

- Environmental Value and Market Failure

The term environmental value has been used broadly by different groups in the popular and scientific literature. We will define what economists mean by value for the environment, and will contrast that definition with philosophical notions of environmental value. We will discuss common causes of market failure for environmental goods including problems of public goods and externalities.

- Regulatory approaches for environmental problems.

We analyze various regulatory approaches to address environmental problems (e.g. standards, market-based incentives) and discuss the relative economic efficiency of those approaches. We will also briefly discuss current U.S. environmental regulatory approaches. After tackling environmental air pollution problems, we will turn to natural resource regulation (fisheries).

- Measuring Environmental Value and Cost Benefit Analysis

We will discuss approaches for measuring economic value for the environment, cost-benefit analysis, discounting, and fairness across generations.

- Topics in environmental Economics.

In this section we will use our environmental economics tool-kit and apply it to numerous issues. As time permits, we will investigate:

1. Climate Change
2. Eco-Labeling
3. Biodiversity
4. Water Policy
5. More??

Important Dates

Item	Date
First day of class	Jan 25
Mid-Term 1	March 1 (Wed)
Spring Break	March 11 - 19
Mid-Term 2	April 12 (Wed)
Last day of this class	May 3
Final Exam	May 9 (7:00 - 10:00pm)

Logistics

- **Illness:**

- This class will abide by campus-wide mask/distancing policy if applicable
- If you are diagnosed with, come in close contact with, or are having symptoms consistent with the flu/Covid please follow all university policies for these cases. You are not required to document your illness for missing classes nor will I be taking attendance. More details about absences:
 - **Missing Classes:** If you miss class due to Covid note that each day we will be covering topics for which there are likely pre-recorded videos available from the syllabus webpage. In addition, all notes written by me will also be available following the lecture. It is your responsibility to contact me within one week of missing class if you have questions about what content you may have missed.
 - **Missing Problem Set Deadlines:** In addition to the policies about assignments outlined below, note that the problem sets in this class involve take home work that can be submitted digitally. In the hopefully highly unlikely event that your **flu/Covid-related** illness prohibits you from meeting these deadlines please contact me ASAP.
 - **Missing Exams:** See **Policy on Missed Assignments** for midterms and finals

- **Turning in your work:**

- **Both Midterms and Final:** Midterms and Finals will be in class and will use handwritten responses.
 - **Problem Sets:** These can be completed on paper of your choosing. You may either use the spaces provided in a printed version of the problem set pdf, or use your own paper, while carefully labeling work to match to problems. Your handwritten work will be collected in class.
- **Office Hours: Thursday 3:30 - 4:30pm** or by appointment.
 - **Email Policy:** I will respond to emails but only if they contain the tag **#econ322#** in the subject line. If they do not, the google will likely delete your email. Please don't expect an email response from me for questions that can't be answered in 3

sentences or less.

- **Grades** Your grade will be based on two Mid-terms (30% each), a Final (30%), and problem sets (10%). Additionally, the final exam will be cumulative. Problem sets will be graded on a simple 3 level scale: completed (most items correctly answered), attempted (either sloppy work, partially attempted, or lots of incorrect answers), or not attempted. Most students making an attempt on the Problem Sets will receive full credit. Grades will be awarded based on a standard grading scale like the one provided in the table below (**after** a curve is applied if a curve is deemed necessary). Usually any curve that is applied in this class is quite small, so plan on your raw score being very close to the curved score. I will usually announce curves on a per assignment basis after grading, so you'll know where you stand.

Letter	+		-
A	N/A	93-100%	90-92%
B	87-89%	83-86%	80-82%
C	77-79%	73-76%	70-72%
D	67-69%	63-66%	60-62%
F	N/A	0-59%	N/A

- **Policy on Missed Assignments**
 - Mid-terms: If for whatever reason you are unable to take a mid-term exam, all weight for the missed exam will be distributed to the **remaining** mid-terms and/or the final. This policy applies to one missed mid-term only, so your second missed mid-term will receive a grade of 0. If you sit for a mid-term you must complete it. I find that students who miss mid-terms usually fare worse in the course so please use the missed mid-term policy judiciously. If you find the mid-term times inconvenient, please drop this class
 - Final Exam: The final exam must be completed at the scheduled time. University policy prohibits me changing a final exam time unless [approved by the Dean of Students](#).
 - Problem sets must be turned in by the assigned due date. Late work not accepted.

Course Materials and Readings List

- We will be using the textbook [Environmental and Natural Resource Economics, 11th edition](#). Instead, you may wish to pick up an [older edition](#) to save money. If you go this route, note that you are responsible for ensuring that your readings follow what is intended for the class. This shouldn't be too difficult for you as the models we are studying this semester are well-established and this book doesn't change often. Of course, if you go with an older edition, the real-world examples will be more dated.
- Additional readings, presentations, and other info is available at the course blackboard site and are grouped by topic with links provided below.
- Lecture videos were recorded in Fall 2020. They are included for your use provided that you understand that the course evolves from year to year and lecture content (including entire topic areas) are subject to change. These videos are no substitute for lectures but may be useful if you want to review a topic.

1. Unit I: Market Failure

- Micro Review, externalities and public goods. Discuss basic market failures when environmental goods are not traded in markets. Focus on defining externalities and public goods with plenty of examples relating to Environment.

Readings: Tietenberg Chapter 2; Problems of social cost (Coase); Tietenberg Chapter 4; "Revealing the Economic Value of Protecting the Great Lakes", National Oceanic and Atmospheric Association [hereafter Great Lakes] Chapter 3

Blackboard Resources: [Intro](#), [Micro Review](#), [Externalities and Public Goods](#)

2. Unit II: Environmental Regulation

- A brief primer on U.S. environmental policy. Discuss major air, water, pollution, and solid waste policies in Us.

Readings: Portney, Public Policies for Environmental Protection.

Note: The second edition of this book is available at the Law School. This isn't required reading but is an extremely valuable resource for critiquing and analyzing US Environmental Policy from a Public Policy perspective.

- Regulations and Incentives. Compare and contrast different regulatory approaches including market-based incentives in microeconomic setting. The costs of U.S. Environmental Regulation.

Readings: Tietenberg Chapters 15 and 16, Economic Instruments for Environmental Regulation (Tietenberg); It's immoral to buy the right to Pollute (Sandel); Environmental Regulation and the Competitiveness of U.S. manufacturing (Jaffe et al.); Do Environmental Regulations Create or Destroy Jobs? (Morgenstern et al.).

Blackboard Resources: [Regulation and Firms](#)

- Natural resource extraction and market failure: the case of fisheries.

Readings: Tietenberg Chapter 13; The tragedy of the commons (Hardin); Incentive-based Fisheries Management (Grafton et al.)

Blackboard Resources: [Regulating Natural Resources](#)

3. Unit III: Valuing Environmental Amenities and Benefit Cost Analysis

- Economic value and non-market goods, types of value for the environment: use value [direct, indirect]; non-use value [existence, bequest], economic impacts versus values. Discuss approaches for measuring the economic value of environmental goods. We will cover methods such as hedonics, travel cost, and contingent Valuation.

Readings: Great Lakes Chapter 6; Barcott (from Outside Magazine)

Blackboard Resources: [Measuring Economic Value](#)

- Benefit Cost Analysis, Discounting, and Equity

Readings: Great Lakes Chapter 4;

Blackboard Resources: [Benefit Cost Analysis](#)

4. Unit IV: Topics in Environmental Economics

- Climate change and trans-boundary pollutants.

Readings: Reflections on the economics of climate change (Nordhaus), Executive summary of the Stern Report.

Blackboard Resources: [Climate Change](#)

- Watershed Management, pollution permits and taxes.

Blackboard Resources: [Watershed Management](#)

- Eco-labeling. Can eco-labeled products lead to socially desirable levels of associated “bads”? How important is the veracity of the label. Examples of eco-labeling.

Readings: Ecolabeling and the Price Premium (Sedjo and Swallow); The Dolphin-safe Tuna Label (Teisl et al.)

- Biodiversity and Development. The economics of biodiversity: what are we protecting. Species versus habitat protection. Ecosystem valuation.

Readings: Conflicts and choices in biodiversity (Weitzman); Willingness to Pay for Charismatic Megafauna (Kontoleon); Preemptive Habitat Destruction (Lueck)

By Rob Hicks

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