ENVIRONMENTAL ECONOMICS I

Econ 8535
Edward Morey
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Course Description

Environmental Economics I (8535) considers the efficient and equitable use of society's scarce environmental resources. Environmental resources include; air, water, land, wilderness areas, parks, wildlife and genetic diversity, and other scarce ecological systems.

Use of these resources will be considered from four perspectives: the market allocation, efficient allocations, equitable allocations, and government attempts to achieve a more efficient and equitable allocation.

Environmental economics is a course in applied welfare economics and will consider market failure (particularly externalities and common property resources), and the economic valuation of environmental amenities such as clean air, wilderness and ecological systems.

Courses in environmental economics and natural resource economics both consider natural resources but differ in that natural resource courses have historically dealt with the inter-temporal utilization of conventional renewable and nonrenewable natural resources such as fish, trees and minerals, whereas environmental courses have considered pollution and other environmental issues from a static perspective. This historical distinction is starting to blur.

Before we begin, I want to make a few comments about what economics is not. Economics is not about making money or how to run a firm. Economics is the study of the allocation of society's scarce resources. Economics per se is not pro market or pro government. The purpose of this course is not to argue that government action to protect the environment is good; sometimes its good, and sometimes it is bad. The purpose of this course is not to extol the virtues of the market. Markets have many virtues, but when it comes to the environments, they also have many faults. In some ways this course could be described as a course on market failure and government actions to correct those failures.

Environmental economics is about measuring the costs of decreasing pollution, cleaning up the environment and protecting scarce ecological systems such as wetlands and wilderness. I want to stress that environmental economics is also about measuring the benefits of decreasing pollution, cleaning up the environment and protecting scarce ecological systems.

Society's production of goods and services and the distribution of those goods and services should not be considered as separate from the environment because, put simply, what we take from the environment to produce our goods and services ultimately ends up being emitted back into the environment in terms of emissions, pollution and wastes. Put simply, the total weight of what is taken from the environment to produce goods and services must eventually equal to weight of what we put back into the environment ("what goes in must come out"). The same is true of energy.

Administrative Details

Web pages: My web site is located at http://www.colorado.edu/Economics/morey/index.html . From it you can link to the web page for Econ 8535, or you can go directly to web page for the course at http://www.colorado.edu/Economics/morey/8545/8545home.html .

> All past and current assignments, review questions will be made available at this site on an as-need basis. Some, but not all of the readings will be available on the web page.

The links to Econ 4535 (Natural Resource Economics), 4545 (Environmental Economics), and Econ 6535 (Resources and the Environment) are
http://www.colorado.edu/Economics/morey/4535/4535home.html ,
http://www.colorado.edu/Economics/morey/4545/4545home.html and
http://www.colorado.edu/Economics/morey/6535/6535home.html .

Review questions and problems will be handed out for each section of the course. I strongly encourage you to write out answers to these questions and discuss them with your classmates. You will want to form study groups. Your grade will be **highly correlated** with you knowledge of the review questions. It is important, for life, to be able to write well. Improvement comes with practice and I will give you ample opportunity to practice.

Final: There will be a comprehensive final which will constitute 30% of your course grade.

Assignments: There will be N short exams assignments (quizzes, small projects, problems, debates, etc.) during the term, and your grades on your best (N-1) of these assignments will constitute 30% of your course grade. Use the review questions to study for the quizzes.

> Some of the assignments will be in-class, some will be take-home. Some of the assignments will be done in groups. The group, usually two or three people, will work together and just turn in one assignment. Everyone in the group will get the same grade for that assignment. Group assignments are one of my ways of giving you an incentive to work and study together.

Class participation: 5% of your course grade will be based on class participation, so make sure to come to class prepared to participate.

How is a particular pollutant or group of pollutants regulated: 10% of your course grade. Each of you will choose a particular pollutant, group of pollutants, or other environmental commodity and produce a web page that describes how that commodity is regulated. The emphasis will be on how it is regulated in the U.S. but you will include some discussion of how it is regulated in other countries. This page will likely have links to other pages. This document will the other students main source of information on the regulation of that commodity. As part of this project you will lecture on the regulation of your chosen commodity.

Paper or project: There will be a paper (5-10 pages - no more) which will constitute 25% of your course grade. Choose some environmental problem and evaluate it in economic terms. Please discuss your paper topic with me. Once you have settled on a topic, do a rough outline and come see me again. The final copy of your paper will be due in my office on the day of the

final. If you get a preliminary version to me two weeks before the end of the term, I will get it back to you within a week with comments. There will be assignments having to do with your paper topic.

I am fairly flexible about what constitutes a paper, with the provision that it has economic and environmental content. It could be a project of some sort, and it could be a group endeavor. A project might be the development of a web page that looks at some environmental issue from an economic perspective. What is important to me is to see that you have taken the theory you have learned in class and can apply it to gain insight into some environmental problem or issue that is of interest to you. For example, choose an environmental market failure that interests you, explain why the market failed, and suggest policies for improving the situation. I want to see you thinking like an economist. A profusion of footnotes and references is not necessary.

I am particularly fond of papers/projects on local issues. Thousands of papers will be written on global warming, maybe only one, yours, will be about the impact of the parking fees in Boulder Mountain parks. With a local issue you are the only one investigating it from an economic perspective, and you have the opportunity to talk to the people involved. With local issues, the details often jump out, forcing you to be more relevant to real world considerations.

Some interesting papers in the past have been on such topics as: "Do We Really Need Bighorn Sheep," "The Economics of Whaling," "The Economics of Outer Space," "Recycling," "The Love Canal," "The Harp Seal Hunt," "Wilderness Management," "Boulder Mountain Parks," "Deforestation," "Regulating Mountain Biking," "Ski Area Development," "Two Forks Dam," "Management in the Holy Cross Wilderness area," "Vasquez: The Proposed Expansion of Winter Park," "Oxygenated Fuels and the Front Range," "Rafting on the Arkansas," Boulder Open space," Wood-burning Stoves," hunting and fishing in Colorado, etc.

Keep in mind that you will likely not have the resources or time to do a complete study. For example, you will not be able to estimate the benefits and costs of some ski area development. Rather a good paper on this topic would discuss how one might measure such benefits and costs if one had the time and resources. It might, for example, develop a survey instrument.

Office hours: My office hours will on Tuesdays from 10:00 to 11:00, Thursdays from 3:15 to 4:30 and by appointment. If you can't make to the office hours, catch me before or after class to schedule a time. My office is Econ 122. Please feel free to contact me by email Edward.Morey@Colorado.edu about setting up an appointment. Sometimes it will take a day or so for me to get back to you.

Prerequisites

Econ 8545 is the PhD level course in environmental economics. Econ Econ 7010 is a prerequisite, or Econ 6535, otherwise, you need my permission. The more prior knowledge of the following topics, the better: environmental economics (e.g., Econ 4545), natural resource economics (e.g., Econ 4535), micro theory, welfare economics, calculus, and math economics.

Readings

Over the years I have brought together a number of journal articles, magazine articles and newspaper articles. These articles are the required reading for the course. Some of these articles are quite old, others very recent. They vary in length from a few newspaper columns to twenty-page journal articles. Some of these articles will be discussed it class. I will often draw review questions from these articles. You are responsible for the material in all of the articles for each section of the outline that is covered in class, even though not all of the readings will be explicitly discussed in class.
Many of these articles were suggested by students. I encourage your comments and feedback on these readings. Bring me articles you feel would be good class readings, and tell me which of the current readings have the greatest value and which have the least value.

I'll "distribute", for each section of the course, the readings that are not on the web page. You, as a group, can collectively keep copies on file on the third floor, make and distribute copies, or whatever. I'll need my originals back. If you wish or need to read ahead, you can borrow them from me.

Some of the readings will be on the course web page or the web pages for some of my other courses. I am in the process of getting more of the readings on the web.

Note that much of the material I will present in class does **not** appear in any of the readings.

Bring me articles you feel would be good class readings, and tell me which of the current readings have the greatest value and which have the least value.

The *New York Times* is a very good source of articles about the environments, particularly the *Science* section on Tuesdays. You can subscribe for the semester at Jones Drugs. *The New York Times* is also available for free on the web (www.nytimes.com). You can also search by topic for articles published in the New York Times during last year at http://archives.nytimes.com/archives .

Applications/topics: Some of the applications/issues/topics we are likely to consider include extinction, pollution permits, parks and wilderness areas, valuation (travel-cost, contingent valuation, and choice experiments), global warming, conservation, mobile-source pollution (from cars and trucks), and acid deposition.

Class format

View the readings and my lectures as complements rather than substitutes. A lot of the basic material that you will be responsible for will be presented in lecture and is material that is not explicitly in the readings, so class attendance is imperative. Class time will be devoted lectures, problem solving and discussions. It is important that you do the appropriate readings before each lecture. Some class time will be devoted to working on the review questions. Prepare for these review sessions by answering the questions to the best of your ability. I will ask a lot of questions and will sometimes offer extra credit for correct answers. Expect to be called on.