Econ 3545
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Course Description

Environmental Economics (3545) 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 intertemporal 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.

Some of the topics we will consider are: what is economics? and what does it have to do with the environment?; institutions to allocate resources (markets, governments, firms, families, etc.); efficiency; equity; the materials balance approach; what is conservation, extinction of animal species, wilderness preservation, pollution and its regulation, etc.

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 need not be pro market or pro government. The purpose of this course is not to argue that government action to protect the environment is bad; sometimes it is bad, and sometimes it is good. 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. As many of you stated on your surveys, environmental economics is about measuring the costs of decreasing pollution, cleaning up the environment and protecting scarce ecological systems. I agree, but I also want to stress that environmental economics is also about measuring the benefits of decreasing pollution, cleaning up the environment and protecting scarce ecological systems.

Details

It is important, for life, to be able to write well. Improvement comes with practice and I will give you ample opportunity to practice.

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.

Final: There will be a comprehensive final which will constitute 25% 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 45% 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 three people, will work together and just turn in one assignment. Everyone in the group will get the same grade for that assignments. Group assignments are one of my ways of giving you an incentive to work and study together.

Paper or project: There will be a paper (5-15 pages - no more) which will constitute 30% 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 December 7th. If you get a preliminary version to me by Nov 18th, I'll get it back to you with comments by Nov 25th.

I am fairly flexible about what constitutes a paper. It could be a project of some sort, and it could be a group endeavor. 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 a 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 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.


I have a file of newpaper and magazine articles on topics that might make good topics for a paper. Please feel free to stop by and look through the file. If you run across an article whose subject might make a good paper topic, please bring it in and we will add it to the file.

Office hours: My office hours will on Tuesdays from 4:45 to 6:00, Thursdays from 11:00 to 12:15 and by appointment. My office is Econ 122. Please feel free to call my office (492-6898) to leave a message. Sometimes it will take a day or so for me to get back to you. Leave a number where you can be reached, and good times to call.

Prerequisites: Principles of microeconomics, or my permission. The course will be significantly more difficult if you have not successfully completed a principles course in microeconomic. I will make available readings on the basics of economic concepts and models. These readings will typically be chapters from a principles book. Judicious study of these reading is recommended. I will also cover the basics in my lectures, but, in general, more quickly than when they are first presented in a principles class. While this is not a mathematics course, and any math you will need will be presented in class, your math courses will make this course easier. Math involves rigor and a way of thinking that is akin to economics. In addition, graphs and simple mathematical descriptions of economic problems provides insights that would be difficult to convey
with just words.

The Textbook and Additional Readings

There are three types of readings. (1) our textbook, (2) background reading to fill in the gaps, (2) articles I have chosen from newspapers, magazines and journals, and (3) articles that you find.


*Environmental and Natural Resource Economics* is a good text for this course, but not a perfect text. There is not a better text. Tietenberg is very good when it comes to applying economic theory to environmental problems. For example, if I wanted to learn about the economics of the pollution from automobiles, I would start with the chapter in *Environmental and Natural Resource Economics* on mobile-source air pollution.

*Environmental and Natural Resource Economics* was written primarily for economics majors; that is, individuals familiar with the economic way of thinking and accustomed to thinking about the allocation of resources in terms of markets and efficiency. This has influenced the way Tietenberg has chosen to introduce economic concepts such as efficiency. Our complication is you are not economic majors, so come to the book with different perspectives. This is good, but it will make it easy for you to misconstrue what Tom is trying to say. Read carefully and with an open mind. I will spend considerable class time discussing statements and passages in Tietenberg.

**background readings:** I have chosen chapters from two introductory micro books as background readings. These readings are primarily intended for those of you who have not taken an introductory micro course, but should also serve as good introductory reading for most of the class. The two micro texts are

Case and Fair, *Principles of Microeconomics* and *The Micro Economy Today* by Schiller

The assigned chapters from these two texts will be in the class library. I chose these two texts because, of all of the texts I examined, they seemed most suited to the task at hand, which is to provide you with short introduction to economics and the economics of the environment. If you have a different principles text with which you are comfortable, use it instead.

**articles:** Over the years I have brought together a number of journal articles, magazine articles and newspaper articles about the environment. Some of these articles will be included in your readings.

Many of these articles were brought to my attention 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.

The *New York Times* is a very good source of articles about the environments, particularly the science section on Tuesdays. It can be purchased for $.75/copy or one can subscribe for the semester at Jones Drugs.

Class Library: It is difficult to determine how best to make the articles available to you. Prior to 1991, I made them part of a packet at Kinkos. That is no longer possible. Then I tried putting them on reserve at Norlin. This raised issues of the loan period, number of copies, etc. It also made it difficult to quickly change and/or add articles. I was not pleased with this system. Last year, I experimented with being the librarian. It worked fairly well, so I will continue with it. But to make it work I will need your help. I will
bring to class multiple copies of the articles for each section of the course. You will be able to sign them out until the next class. If you check them out to make copies, I encourage you to form group efforts.

ENVIRONMENTAL ECONOMICS

I. What is Economics, and what does it have to do with the environment?
A. Principles of Microeconomics, Chap 2: The Economic Problem: Scarcity and Choice
B. The Micro Economy Today, Chap 1: An Overview
   1. The first two readings will introduce you to economics and the economic problem
C. Tietenberg, Chap 1: Visions of the Future
   1. A bit about models
D. Principles of Microeconomics, Chap 12: Pareto Efficiency (338-339) and The Sources of Market Failure (345-351)
   1. Readings E, F and G will introduce you to environmental economics
E. The Micro Economy Today, Chap 3: The Public Sector, the section Micro Failure (59-65)
F. Principles of Microeconomics, Chap 16: Externalities, Public Goods and Imperfect Information, the section on Externalities and Environmental Economics (444-458)
G. The Micro Economy Today, Chap 13: Environmental Protection
H. Tietenberg, Chap 2: Economics of the Environment: An Overview
   1. Chapter 2-4 in Tietenberg covers the materials presented in the above readings, but in more detail
I. Tietenberg, Chap 3: Environmental Rights, Externalities, and Environmental Problems
J. Tietenberg, Chap 4: Regulating the Market: Information and Uncertainty