

# UNIVERSITY OF COLORADO

## Department of Economics

Environmental Economics-ECON 3545-001, Spring, 2012

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Lecture: TTH: 2:00-3:15, Jan 17-May 3, HUMN 150  
Office Hours: T 10:00am-11:00am, W 1:00pm-3:00pm and by appointment.  
Website: <http://learn.colorado.edu> (note this is not CUlearn)

### Course Description

At a fundamental level, the environment is the ultimate source of scarcity. The earth provides all the material for anything ever produced and the energy to do so. As such, environmental quality has become a major focus of public concern. At the heart of the matter is the sustainability of our economic growth and its interaction with the carrying capacity of the earth. Numerous environmental agencies have been established to influence environmental policy. Politicians now must include environmental issues as part of their agenda. Specialized fields have emerged to allow engineers, scientists, lawyers, and economists to focus their efforts on analyzing and solving environmental problems.

This course is designed to extend your economic understanding by studying the economic approach to analyzing and solving environmental problems. Environmental economics is a study of externalities with a focus on pollution. Economics is crucial in understanding the human behavior which leads to these externalities as well as the possible solutions. Even where markets fail, economics still provides powerful tools to study the decisions of how to allocate scarce resources. Over the course of the semester we will consider how the economy and the environment impact one another. We will address the role of property rights and externalities in the economy, consider welfare economics and the environment, learn to use cost-benefit analysis, discuss how to discern the economic value of the environment, explore various sources of pollution and the economic tools available to alter polluting behavior, as well as the considering the spatial impacts of various problems and solutions. In the end, economics should provide you with an analytical tool with which to analyze possible environmental policies; it may come as a surprise that in some basic microeconomic knowledge is required. Students must have taken

-1000 or ECON 2010. In addition, the course is for non-econ majors.

This course requires basic algebra tools. It will be assumed that students possess these and there will be no formal math review.

## Readings

Textbook: Tom Tietenberg & Lynne Lewis (2011). *Environmental & Natural Resource Economics*  
Pearson, 9<sup>th</sup> Edition

The textbook is considered required. Naturally, not all of the textbook will be covered in class. Reading the laered in class.

## Homework

Over the semester there will be 4 problem sets and 3 article summaries. No late assignments will be accepted and no assignment will be dropped from your grade.

**Problem Sets:** As we progress through the semester I will post 4 problem sets on the course website. A hard copy is due at the beginning of class on the given date. They are intended to apply the theory and concepts from the textbook and lecture and help prepare you for the exams. I encourage you to work in small groups on these assignments, though I require everyone to turn in their own copy. Each problem set will make up 5% of your overall grade.

**Article Summaries:** You will be reading a few original articles throughout the semester. In order to ensure everyone is prepared, I will require a one page summary (single spaced). The articles will be posted on the course website. In total there will be 3 summaries required. Official due dates will be announced in class, though the articles are tentatively scheduled below. The summaries will be due prior to the designated class submitted on the course website. The summaries will collectively account for 10% of your grade.

## Clickers

You will need to have a clicker for this course. The intent of the clicker is twofold. 1. The class is large but the topic is better suited for small discussions. The clicker questions will be intended to engage you in the class as well as with your classmates. 2. It is an opportunity for you to boost your grade. The grading scheme totals to 105%. The 5% from participation provides incentive to participate. Since the points are extra, there will be some premium placed on correct answers when appropriate.

## Project/Proposal

The final portion of your grade will be a group paper or proposal. I expect the paper to be 3-5 single spaced pages. The subject matter is up to you, so long as it is related to environmental economics. You may choose to either analyze a current or historical issue in environmental economics using the tools and models from class or create a proposal for a research project on an environmental issue. Due to class size, I am requiring you form groups of 3 or 4 to complete the project. If you have difficulty in forming a group, let me know and I will assist in coordinating you. A short document will be due on Thursday, February 23<sup>rd</sup>, identifying your group members and your intended topic. Further details will be provided concerning my expectations of the project.

## Tentative Course Schedule

Due dates and exam dates are firm. Topic coverage is subject to change.

Date	Topic	Textbook Ch.	Due
Introduction			
January 17-19	The Sustainability Problem and Economics	Ch. 1	
January 24-26	Population and Development	CH. 21	
Economic Analysis			
January 31-Feb. 2	Property Rights and Coase	CH. 2	

February 7-9	Welfare Economics		-Kaldor (1939)
February 14-16	Cost-Benefit Analysis	CH. 3	-Problem Set 1, Feb. 14 <sup>th</sup>
February 21-23	Valuing the Environment	CH. 4	-Project Proposal, Feb. 23 <sup>rd</sup>
February 27-March 1	Valuing the Environment		-Hanemann (1994) -Diamond & Hausman (1994)
Pollution			
March 6-8	Economics of Pollution	CH. 14	-Problem Set 2, March 6 <sup>th</sup> -Exam 1, Thursday, March 8 <sup>th</sup>
March 13-15	Pollution Control Instruments		-Keohane (2009) -Metcalf (2009)
March 20-22	Stationary Sources	CH. 15	
March 27-29	Spring Break		No Class
April 3-5	Mobile Sources	CH. 17	
April 10-12	Water Pollution	CH. 18	-Problem Set 3, April 12 <sup>th</sup>
Environmental Justice and International Concerns			
April 17-19	Environmental Justice	CH. 19	
April 24-26	Climate Change and International Environmental Issues	CH. 16 CH. 20	
May 1-3	Accounting for the Environment		-Group Project, May 1 <sup>st</sup> -Problem Set 4, May 3 <sup>rd</sup>

### Religious Observances

Campus policy regarding religious observances requires that faculty make every effort to deal reasonably and fairly with all students who, because of religious obligations, have conflicts with scheduled exams, assignments, or required attendance. If you have a conflict due to a religious obligation, please see me at least one full week in advance so that alternate arrangements can be made. Policies regarding religious observances are available at [www.colorado.edu/policies/fac\\_relig.html](http://www.colorado.edu/policies/fac_relig.html).

### Classroom Behavior

Students and faculty each have responsibility for maintaining an appropriate learning environment. Those who fail to adhere to such behavioral standards may be subject to discipline. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences of race, culture, religion, politics, sexual orientation, gender, gender variance, and