

**INTRODUCTION TO ENVIRONMENTAL ECONOMICS**  
ENSC/ECON-006  
Lecture (3 times weekly) and Discussion (weekly)

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**Office:** Geology 2460D  
**Office Hours:** 2 hours scheduled weekly  
Also by appointment

**TA:** Graduate Student in Environmental Sciences or Economics

### Course Objectives

This course focuses on the application of economic principles to help understand and manage the relationship between humans and the environment. The central theme is that there are competing demands for our limited natural resources, including the waste assimilation capacity of the environment, necessitating that difficult choices be made regarding how those resources are used. The course illustrates how resources are allocated in a market economy, potential problems from a social perspective with that allocation, and alternative solutions for reallocating resources to achieve more socially desirable outcomes. Issues such as efficiency and externality, benefit-cost analysis, and alternative policy instruments for pollution control are examined. Topics related to global warming, California water resources, and other current environmental policy issues will be discussed as time permits.

### Course Website

The course is registered as a Blackboard course at <http://www.ilearn.ucr.edu>. Most course materials, including homework assignments, will be posted on this website in PDF format. You must have an active UCR email account to access the website and a PDF reader installed on your computer to view the files. Instructions for obtaining a free PDF reader are posted on the website. **You are responsible for accessing all documents posted on the website.** If you ever have difficulties that neither you nor your classmates can resolve, contact the professor or the TA.

### Readings

The required text for this course is Environmental Economics - An Introduction, 4<sup>th</sup> edition, by Field and Field (McGraw-Hill, 2006). One copy is on reserve in Rivera Library. Additional readings will be assigned and/or suggested to supplement the text. All required readings will be made available either on the course website or in hard-copy format and distributed during lecture.

For those wanting additional background reading, two copies of Intermediate Microeconomics: A Modern Approach, 5<sup>th</sup> edition, by Varian (Norton, 1999) are on reserve in Rivera Library. Other editions of this book are good resources, as well.

Lastly, for those who take an interest in studying this field further, numerous references and articles are available for your perusal. Please do not hesitate to ask.

### Grading

- Five problem sets: 6% each
- Two midterm exams: 20% each
- Final exam: 30%
- Discussion sections (extra credit – see below): 5%

Each problem set will be handed out in lecture approximately one week prior to its due date. You may work on the problem sets in groups, but **you must hand-in your own independent write-up**. Write-ups must be typed or neatly written – illegible answers and poor writing will be marked down at the TA's discretion. Late assignments will be penalized 20% each day after the due date (including weekend days). Grade disputes must be submitted in writing and will involve a complete re-grading of the entire assignment.

The midterm and final exams will cover material from lectures, discussion sections, assigned readings and problem sets. The midterm exams will be given during lectures and the final exam will be during finals week. If you have a conflict with any of these exam times, bring it to the professor's attention as soon as possible. Requests for alternative exam times are discouraged but will be handled on a case-by-case basis. The final exam will be cumulative, but will emphasize the latter part of the course. Grade disputes must be submitted in writing and will involve re-grading the entire exam.

Your TA teaches three discussion sections each week. The purpose of these sections is to review and discuss material covered in lecture and occasionally to present new material that supplements the lectures. Participation in these sections (e.g., attendance, discussion, in-class assignments and quizzes) is optional but will count as extra credit. Please arrive on-time – late arrivals (and early departures) may be marked absent at the TA's discretion.

No additional extra credit assignments will be offered in this course. Final letter grades will be curved.

## **Tentative Course Outline**

### ***Introduction***

Lecture topics

- Course overview
- Introduction to environmental economics

Readings

- Field, chapters 1 and 2
- *Never the Twain Shall Meet*, The Economist, 2/2/2002

### ***Analytical Tools and Welfare Analysis***

Lecture topics

- Willingness to pay
- Benefits and demand curves
- Costs and supply curves
- Economic efficiency and the Equimarginal Principle
- External costs and open-access resources
- External benefits and public goods

Readings

- Field, chapters 3 and 4
- *How Subsidies Destroy the Land*, The Economist, 12/11/1997
- Excerpt from *The Tragedy of the Commons* by G. Hardin (1968), Science, 162: 1243-1248

### ***Environmental Quality and Natural Resource Valuation***

Lecture topics

- Pollution control
- Non-market valuation

Readings

- Field, chapters 5 and 7
- *The Price of Imagining Arden*, The Economist, 12/3/1994

### ***Environmental Policy Strategies and Analysis***

Lecture topics

- Command-and-control strategies

- Incentive-based strategies

#### Readings

- Field, chapters 11 – 13
- *Taxes for a Cleaner Planet*, The Economist, 6/28/1997
- *Fuelling Discontent*, The Economist, 5/17/2001
- *Money to Burn?*, The Economist, 12/6/1997

#### ***Current Environmental Issues – as time permits***

#### Lecture topics

- California water resources
- Global warming
- Sustainable development

#### Readings & Videos

- *Cadillac Desert* by Marc Reisner (PBS documentary)
- *High Tide, Arid Land*, The Economist, 5/25/2000
- *Flowing Gold*, The Economist, 10/8/1998
- *Valley of the Dammed*, The Economist, 2/21/1998
- *Buying a Gulp of the Colorado*, The Economist, 1/24/1998
- *Rage over Global Warming*, The Economist, 4/5/2001
- *Oh no, Kyoto*, The Economist, 4/5/2001
- *Blowing Smoke*, The Economist, 2/14/2002
- *Tax or Trade*, The Economist, 2/14/2002
- *Economic Man, Cleaner Planet*, The Economist, 9/27/2001
- *Jam Today, Road Pricing Tomorrow*, The Economist, 12/6/1997
- *The Eternal Challenge*, The Economist, 8/25/2005
- *Drought Settles In, Lake Shrinks and West's Worries Grow*, The New York Times, 5/2/2004
- *Court Clips Air Panel Authority*, The Press Enterprise, 4/29/2004
- *DMV Chief Backs Tax by Mile*, The Los Angeles Times, 11/16/2004