

Econ 370  
Environmental Economics  
Spring 2007

Basics:

Professor: Joshua Linn  
Meeting Time: TTH 12:30-1:45PM, BSB 337  
Office Hours: UH 2102, TTH 2-5PM or by appointment  
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TA: John Gunter; Office Hours: UH 2100 M 1-3PM

Textbook: Tietenberg, Environmental and Natural Resource Economics, 7<sup>th</sup> ed., Addison Wesley.

Course Description:

We will study a number of environmental topics, such as energy policy and carbon dioxide regulation, in the context of market failures. The course begins with a review of perfect competition, emphasizing the fact that the market may not be efficient when there are externalities or firms with market power. We use this theoretical framework to assess whether government regulation might improve social welfare. We will discuss a number of environmental and natural resource issues, including energy markets, gasoline taxes, and the regulation of electric utilities. There will be two major themes as we study these topics. We will see how policy-makers use cost-benefit analysis to assess whether a policy is likely to increase or decrease social welfare, discussing the methodology and potential limitations of this approach. We will also compare the efficiency of different regulatory approaches, such as traditional “command-and-control,” and tradable permit programs, which have become increasingly common.

Course Website and Lecture Notes:

There is a website for this course on Blackboard, which you should already have access to. I will post lecture notes, problem sets and practice exams on the website.

Requirements:

**Problem Sets:** There will be five problem sets during the semester. You can work with others on the problem sets, but your answers must be in your own words.

**Exams:** There will be two midterm exams and a final exam.

**Final Grade:** Your grade will be determined by the problem sets (20%), the midterms (25% each) and the final (30%)

### Approximate Problem Set and Exam Dates

Please Note: These may change, but you will receive advance notice if they do

1. Problem Sets
  - a. Problem Set 1: January 30
  - b. Problem Set 2: February 20
  - c. Problem Set 3: March 13
  - d. Problem Set 4: April 5
  - e. Problem Set 5: April 24
  
2. Exams
  - a. Midterm #1: February 27
  - b. Midterm #2: April 12
  - c. Final: Finals week (TBA)

Please note that the CBA honor code applies to all exams and problem sets.

### Course Outline

Please note: the course will not follow the textbook exactly. I will not cover the chapters in order, I will skip some of the material in chapters that I do cover, and I will cover some material not found in the textbook. For the exams, you will only be responsible for material I cover in class, all of which can be found in the lecture notes.

1. Introduction (Chapter 1)
  
2. Perfect Competition and Market Failures (Chapter 4)
  - a. Review of perfect competition and welfare
  - b. Market failures
  
3. Natural Resource Economics (Chapters 5, 7 and 8)
  - a. Dynamic model of natural resources
  - b. Energy economics: oil and gas markets
  
4. Cost-benefit Analysis (Chapters 2-3)
  - a. Measuring costs
  - b. Measuring benefits
  - c. Policy analysis
  - d. Limitations of cost-benefit analysis
  
5. Environmental Economics (Chapters 15-18)

- a. Introduction to environmental regulation
  - i. Efficient level of pollution production
  - ii. Efficient policies
  - iii. Overview of US regulatory approach
- b. Command and Control regulation
  - i. Introduction to the Clean Air Act
  - ii. Cost-benefit analysis of the Clean Air Act
- c. Market-based regulation
  - i. Introduction to permit markets and pollution taxes
  - ii. The Acid Rain Program
  - iii. Recent and future permit programs: greenhouse gases?
  - iv. Limitations of market-based regulations
- d. Emissions from automobiles and trucks:
  - i. Unleaded gasoline
  - ii. Fuel efficiency: CAFÉ vs. gasoline taxes
- e. Time permitting, other topics will include: water, sustainable development and ethanol.