

Course Syllabus

UPP 537 – Economics and Environmental Planning

Spring 2007

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Office hours: By appointment.

Meeting time and location: Tuesdays and Thursdays 4:00-5:30pm, Art and Design Hall Room 2232

Course Description:

This class builds on the microeconomic concepts learned in UPP 504, to introduce the concepts of environmental economics and their implications for planning. In this course we will explore how environmental problems are defined and addressed within the field of economics, with special attention to both the potential and the limitations of the analytical approaches this field proposes. The course will therefore focus on theoretical/conceptual and methodological components, rather than emphasizing actual applications. The main themes that will be discussed include:

- Introduction and review of some microeconomic concepts
- Sources of environmental problems
 - Externalities
 - Public and common goods
- Economic methods to address environmental problems
 - Benefit-cost analysis (BCA)
 - Command-and-control
 - Economic incentives
 - Tradable permits
- Non-market valuation
 - Contingent valuation
 - Environmental demand and hedonic pricing
- Complexity

Goals:

The goal of this class is for students to gain a basic understanding of the theoretical framework and analytical tools of environmental economics, and their implications for policy. In addition to the potential of this field's perspective, students will be expected to be able to identify their shortcomings and discuss the assumptions under which different policy results may be obtained.

Class format:

In each lecture we will cover the theory and applications. Nevertheless, given the emphasis on critical analysis, consistent attendance and participation in class discussion is essential and *required*.

Readings:

Required texts:

- Tietenberg, T., 2006. Environmental and Natural Resource Economics, 7th edition. Addison Wesley.
- Stavins, Robert N. (Ed.), 2005. Economics of the Environment: Selected Readings. Fifth Edition. W. W. Norton & Co..

Recommended text:

- Gunderson, Lance H., and C. S. Holling, eds. 2002. Panarchy: Understanding Transformations in Human and Natural Systems. Washington, DC: Island Press.
- Repetto, R., Ed. (2006). Punctuated Equilibrium and the Dynamics of U.S. Environmental Policy. New Haven, Yale University Press.
- Simpson, R. D., M. A. Toman, and R. U. Ayres, eds. 2005. Scarcity and Growth Revisited: Natural Resources and the Environment in the New Millenium. Washington, DC: Resources for the Future Press.

Other required readings will be posted on the course website throughout the semester.

Course requirements and grading:

The requirements of the course include:

- A midterm exam: 25%
- A final exam: 25%
- A term paper and presentation: 35%
- Class participation: 15%

There will be no early or makeup exams and late assignments will not be accepted, except for cases where there is a documented emergency.

I will give out lists of questions and problems for practice that will not be graded and you will not be required to turn them in. The exams will, however, include variations on these practice problems. I encourage you to work with your classmates on the practice sets and use my office hours for questions.

To ensure that adequate time is given to the term project, paper topics will be submitted in the third week of class. I highly recommend discussing the development of your paper with me throughout the semester.

Some guidelines for the term paper:

Deadline: May 8, 2007, 4:00pm.

Length: 15-20 pages, 12 pt. font size, double space.

Include appropriate citations and list of references.

Ideas about content:

- Description of the issue: topic, dimensions (environmental, economic, social, etc.) and thesis.
- Identification of key players and their objectives: major stakeholders and the function they try to maximize. Can it be summarized in some mathematical/graphical form? Are there other (better) ways to represent these interests?
- Interactions: How do the players interact? Can they form a market and under what conditions would it be efficient? Are there any equity/distributional issues? Is there uncertainty involved? What is the policy controversy in this issue? How could this controversy be addressed with economic concepts and methods?
- Future steps to conduct an empirical analysis. Identify the steps you would need to take to address the policy controversy. How would you set up the study? What data would you need?

All written assignments will be evaluated based on depth of research, clarity and organization, and argumentative skills. Students will present their paper in class at the end of the term. This is expected to be a professional presentation, with adequate preparation and auxiliary materials (e.g. visuals, handouts).

Academic integrity:

I expect academic integrity. Any case of academic dishonesty will be reported and handled according to university policies. If you have any questions regarding this issue, do not hesitate to talk to me.

Schedule (subject to change, check before each class!)

Last updated: 4/12/07

| Week | Date | Topic | Reading |
|-------------|-------------|---|---|
| 1 | Jan. 16 | Introduction and review of essential math | |
| | Jan. 18 | The environmental economics framework | Tietenberg, Ch. 1 + 1 st two pages of Ch. 2 (up to “Normative Criteria...”); Stavins, Ch. 1; Simpson et al. Ch. 1 (up to “The Essays”); skim Hackett, Ch. 2. |
| 2 | Jan. 23 | Principles of microeconomics: Market efficiency and Benefit-Cost Analysis (BCA) | Tietenberg, rest of Ch. 2, Ch. 3 (pp. 46-61); Turner et al., Ch. 7. |
| | Jan. 25 | Critique of BCA | Stavins, Ch. 12 and 14; MacIntyre |
| 3 | Jan. 30 | Externalities and market failure | Hackett, Ch. 3 (pp. 44-9) and Ch. 4 (up to p. 68); Gowdy and O’Hara (consumer, producer and price). |
| | Feb. 1 | Public goods and the tragedy of the commons Paper topic due | Stavins, Ch. 2; Terry Moore. |
| 4 | Feb. 6 | Property rights and environmental problems | Tietenberg, Ch. 4 |
| | Feb. 8 | Sustainable development | Tietenberg, Ch. 5; Stavins, Ch. 26, Gunder. |
| 5 | Feb. 13 | Depletable and renewable resources | Tietenberg, Ch. 7; Simpson et al. Ch. 7 |
| | Feb. 15 | Renewable and non-renewable energy | Tietenberg, Ch. 8; Simpson et al. Ch. 5. |
| 6 | Feb. 20 | The economics of recycling | Tietenberg, Ch. 9, your own sample cases and analysis. |
| | Feb. 22 | Renewable resources: Water | Tietenberg, Ch. 10. |
| 7 | Feb. 27 | Renewable common pool resources | Tietenberg, Ch. 13 |
| | Mar. 1 | Land conversion and loss of green/open spaces Midterm assignment due | Tietenberg, Ch. 12; MacDonald and Rudel. |

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| 8 | Mar. 6 | Economics of pollution control | Tietenberg, Ch. 15. |
| | Mar. 8 | Local air pollution control and tradable permits | Tietenberg, Ch. 16. |
| 9 | Mar. 13 | Regional and global air pollutants | Tietenberg, Ch. 17; Stavins, Ch. 17, Ch. 18 and Ch. 23. |
| | Mar. 15 | Mobile-source air pollution | Tietenberg, Ch. 18. |
| 10 | Mar. 20 | Water pollution | Tietenberg, Ch. 19. |
| | Mar. 22 | Environmental justice | Tietenberg, Ch. 21; Simpson, Ch. 13 |
| 11 | Mar. 27 | Spring Break | |
| | Mar. 29 | | |
| 12 | Apr. 3 | Environmental demand (non-market valuation) | Tietenberg, Ch. 3 (up to p. 47, skip critique of contingent valuation, p. 39-40); Goulder and Kennedy; Turner et al., Ch. 8 (pp. 108-120). |
| | Apr. 5 | Hedonic pricing | Hackett, Ch. 6 (148-50); Turner et al., Ch. 8 (pp. 120-2). Tyrvainen. |
| 13 | Apr. 10 | Contingent valuation | Kolstad, Ch. 18 (skip problems with CV, p. 363-5); Hackett, Ch. 6 (pp. 138-43); Stavins, Ch. 7 and 8 up to p. 153. |
| | Apr. 12 | Debate over contingent valuation | Kolstad, p 363-5; Hackett, Ch. 6 (pp. 143-45); Turner et al. (pp. 122-7). Stavins, rest of Ch. 8 and Ch. 9. |
| 14 | Apr. 17 | Development, poverty, and the environment | Tietenberg, Ch. 22; Simpson et al., Ch. 14 |
| | Apr. 19 | The quest for sustainable development | Tietenberg, Ch. 23; Stavins, Ch. 21 |
| 15 | Apr. 24 | Complexity Final assignment due | Norton et al.; Daly and Townsend; Costanza et al.; Gunderson and Holling. |
| | Apr. 26 | Student presentations | |
| 16 | May 1 | Student presentations | |
| | May 3 | Student presentations, wrap-up and evaluations | Tietenberg, Ch. 24; Stavins, Ch. 32. |
| 17 | May 8 | Term paper due | |