

University of Minnesota  
Department of Applied Economics

ApEc 5611  
Naomi Zeitouni

Spring 2003

**APEC 5611: Economic Aspects of Environmental Management**

**Lecture time:** M,W,F 9:35 – 10:25  
**Location:** ClaOff B22  
**Instructor:** Naomi Zeitouni

**Instructor Information:**

**NAOMI ZETOUNI:**

**Office:** 317F Classroom Office Building  
**Office Hours:** M, W 3:00 – 4:00  
**Phone Number:** 612 625 1941  
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**Credits:** 4 credits

**Course Description:** This course introduces the economists approach to environmental problems such as water and air pollution to students without economic background. It includes application of supply and demand concepts to the evaluation of environmental resources, methods of evaluation, and analysis of pollution control policies from the economic point of view. The objective of this class is to stimulate critical thinking about environmental management. In order to accomplish this objective, the course incorporates readings from environmental economics that introduce principles of economic methods related to environmental management, with emphasis on policies to reduce pollution and evaluation of environmental resources. We will lay the foundation for understanding policies to control pollution, define efficient and cost effective levels of control for variety of pollution types, compare these control levels with those achieved by market forces, and demonstrate how these insights can be used to design desirable policy responses.

**Prerequisites:** Senior or grad student standing in Biological Science, Conservation Biology, Ecology, Fisheries, Forestry, Public Affairs, Water Resources, Wildlife Conservation, the College of Liberal Arts or instructor consent

**Course Website:** <http://www.apec.umn.edu/staff/nzeitoun/apec5611.html>

**Textbook:** Since the materials for this course are taken from few sources, there will be a course folder in the Wheite library with all the needed reading in it.

**Grading:** There will be a mid-term, final exam and 3-4 homework assignments. The mid-term will contribute 30%, Homework will contribute 20% for each assignment and the final will cover 50%.

**Topics and Reading List:**

I. How much environmental protection?

1. Who should decide?
2. Social choice mechanisms
3. Impossibility of perfect choice mechanism

Kolstad Ch. 3

II. Environmental policy

1. The role for government intervention in competitive markets: Market failure: public bads and externalities.

Perman et al Ch 5 Tietenberg Ch 2

2. Property rights.
3. Pigovian Fees
4. Regulating pollution
5. Emission fees and marketable permits.

Perman et al Ch 7 Tietenberg Ch 4

6. Regulation with unknown control costs.
7. Addressing risk and uncertainty with environmental policy.

Perman et al Ch 8, Kolstad Ch 10 (pp 183-193), Ch 11 (206-208)

III. Evaluation of the utility from increasing environmental quality

1. Why do we want to evaluate environmental quality?
2. Translation of changes in utility to monetary terms.
3. Use and non use values.

Perman et al Ch 12

IV. Market valuation

1. Economic background: production cost, supply, demand, market equilibrium and efficiency.

Case and Fair Ch: 4, 6 (pp 127-142)

2. Hedonic pricing

3. Travel cost analysis
4. Household production function

Kolstad Ch 16 (pp313-318) Ch 17 (pp344-354)

- V. Non market valuation
1. When should it be used?
  2. Contingent valuation method
  3. Dose response approach.

Kolstad Ch 18

- VI. Applications (time permits)  
Air pollution from automobiles and point sources, water pollution from point and non point sources, Climate change and the Ozon leyre thinning , biodiversity protection.

Tietenberg Ch 13 -16, Perman et al Ch 10

Water  
Biodiversity  
Agriculture

References:

Case K. E., and Faire R. C. *Principles of Economics*, Prentice Hall International Inc. 1999 (Fifth edition).

Kahn J. R., *The Economic Approach to Environmental and Natural Resources*, Dryden Press, 1995.

Kolstad C. D., *Environmental Economics*, Oxford University Press, 2000.

Perman R., Yue Ma, McGilvray J. and Common M., *Natural Resource and Environmental Economics*, Pearson Addison Wesley, 1996.

Tietenberg T., *Environmental Economics and Policy*, Addison Wesley Longman, 2001.

## Standard Statement on Course Requirements

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1. The two major grading systems used are the A-F and S-N. Departmental majors must take major courses on the A-F system; non-majors may use either system. The instructor will specify criteria and achievement levels required for each grade. All students, regardless of the system used, will be expected to do all work assigned in the course, or its equivalent as determined by the instructor. Any changes you wish to make in the grading base must be done in the first two weeks of the semester.

2. The instructor will specify the conditions, if any, under which an "Incomplete" will be assigned instead of a grade. The instructor may set dates and conditions for makeup work, if it is to be allowed. "I" grades will automatically lapse to "F"s at the end of the next semester of a student's registration, unless an instructor agrees to submit a change of grade for a student during a subsequent semester to maintain the grade as an "I".

3. Inquiries regarding any changes of grade should be directed to the instructor of the course; you may wish to contact the Student Dispute Resolution Center (SDRC) in 107 Eddy Hall (625-5900) for assistance.

4. Students are responsible for all information disseminated in class and all course requirements, including deadlines and examinations. The instructor will specify whether class attendance is required or counted in the grade for a class.

5. A student is not permitted to submit extra work in an attempt to raise his or her grade, unless the instructor has specified at the outset of the class such opportunities will be afforded to all students.

6. Scholastic misconduct is broadly defined as "any act that violates the right of another student in academic work or that involves misrepresentation of your own work. Scholastic dishonesty includes, (but is not necessarily limited to): cheating on assignments or examinations; plagiarizing, which means misrepresenting as your own work any part of work done by another; submitting the same paper, or substantially similar papers, to meet the requirements of more than one course without the approval and consent of all instructors concerned; depriving another student of necessary course materials; or interfering with another student's work."

7. Students with disabilities that affect their ability to participate fully in class or to meet all course requirements are encouraged to bring this to the attention of the instructor so that appropriate accommodations can be arranged. Further information is available from Disabilities Services (230 McNamara).

8. University policy prohibits sexual harassment as defined in the December 1998 policy statement, available at the Office of Equal Opportunity and Affirmative Action. Questions or concerns about sexual harassment should be directed to this office, located in 419 Morrill Hall.

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