

UNIVERSITY OF MARYLAND
Department of Economics

ECONOMICS 481: ENVIRONMENTAL ECONOMICS

W. Oates

Spring Term, 2009

This course will develop the economic perspective on environmental problems. It begins by using basic microeconomic theory to conceptualize "pollution" as an economic problem. This view has direct implications both for the determination of the appropriate (or efficient) level of environmental quality and for the choice of policy instruments for the attainment of environmental standards. In particular, the course will explore the use of economic incentives for protection of the environment; the readings and class discussion will develop the basic analytic foundation for these policy instruments (such as environmental taxes and cap-and-trade systems) and will examine the ways they have been used in the U.S. and abroad for environmental management. The course will also address international environmental problems with special attention to the issue of global climate change.

Readings:

The readings for the course will draw on two basic sources, a textbook and a collection of short readings:

- Charles D. Kolstad, Environmental Economics (Oxford University Press, 2000)
Wallace E. Oates, ed., The RFF Reader in Environmental and Resource Policy,
Second Edition (Washington, D.C.: Resources for the Future, 2006).

There will also be a few short, supplementary readings that will be distributed in class.

Prerequisites:

The prerequisites for this course are Economics 306 [Intermediate Microeconomic Theory] and a working knowledge of the basic calculus.

Examinations, Paper, and Grades:

For grading purposes, there will be two midterm examinations, a final exam, and a short paper. The midterm exams will each count 20 percent, the final exam 40 percent, and the paper 20 percent of the final grade. The midterm exams will be held during the class period on Tuesday, March 3rd, and on Thursday, April 16th. The final exam is scheduled on Monday, May 18th, from 10:30am to 12:30pm.

Each student will write a four-to-five page (double-spaced) paper to be handed in during the class period on Thursday, April 30th. The topic (or choice of topics) will be announced.

Students are required to take all the exams. Make-up exams will be given **only** to those students whose excuse complies with University policy. If you believe you need a make-up, please inform me and provide the appropriate documentation as soon as possible. The four valid

excuses according to University policy are: medical conditions, religious observances, participation in University events at the request of University authorities, and compelling circumstances beyond your control. If you miss an exam without a valid excuse, your grade will be recorded as zero. Please note also that there are no provisions in the course for "extra credit."

Some Further General Information

Academic Accommodations: If you have a documented disability, you should contact Disability Support Services in 0126, Shoemaker Hall. Each semester students with documented disabilities should apply to DSS for accommodation request forms which you can provide to your professors as proof of your eligibility for accommodations. The rules for eligibility and the types of accommodations a student may request can be reviewed on the DSS web site at http://www.counseling.umd.edu/DSS/receiving_serv.html

Religious Observances: The University System of Maryland policy provides that students should not be penalized because of observances of their religious beliefs; students shall be given an opportunity, whenever feasible, to make up within a reasonable time any academic assignment that is missed due to individual participation in religious observances. It is the responsibility of the student to inform the instructor of any intended absences for religious observances in advance. Notice should be provided as soon as possible, but no later than the end of the schedule adjustment period. Faculty should further remind students that prior notification is especially important in connection with final exams, since failure to reschedule a final exam before the conclusion of the final exam period may result in loss of credits during the semester. The problem is especially likely to arise when final exams are scheduled on Saturdays.

Academic Integrity: The University of Maryland has a nationally recognized Code of Academic Integrity, administered by the Student Honor Council. This Code sets standards for academic integrity at Maryland for all undergraduate and graduate students. As a student, you are responsible for upholding these standards for this course. It is very important for you to be aware of the consequences of cheating, fabrication, facilitation, and plagiarism. For more information on the Code of Academic Integrity or the Student Honor Council, please visit <http://www.studenthonorcouncil.umd.edu/whatis.html>

The University of Maryland is one of a small number of universities with a student-administered Honors Code and an Honors Pledge, available on the web at <http://www.ipu.umd.edu/aca/honorpledge.html> The code prohibits students from cheating on exams, plagiarizing papers, submitting the same paper for credit in two courses without authorization, buying papers, submitting fraudulent documents, and forging signatures. The University Senate encourages instructors to ask students to write the following signed statement on each examination or assignment: "I pledge on my honor that I have not given or received any unauthorized assistance on this examination (or assignment)."

Instructor's Contact Information and Class Logistics:

My office is Tydings 3147E, my phone is 301-405-3496, and my e-mail address is oates@econ.umd.edu During this term, my office hours are Tuesday 3:30PM-4:30PM, Thursday 1:00PM-2:00PM, and by appointment.

The class meetings are Tuesday and Thursday from 2:00 to 3:15PM in Tydings 0102.

Reading Assignments

I. Introduction to Environmental Economics

- A. Pollution as an Economic Problem
 - 1. Kolstad, Preface, Chs. 1,2, and 3
 - 2. *RFF Reader*: Oates, "An Economic Perspective on Environmental and Resource Management: An Introduction," pp. xv-xx
- B. Some Historical Context
 - 1. *RFF Reader*, Ch. 50
- C. Science and Environmental Policy
 - 1. *RFF Reader*, Chs. 1 and 2

II. The Source of Pollution: Externalities and Market Failure

- A. The Theory of Market Failure
 - 1. Kolstad, Ch 4 (pp. 49-68) and Ch 5
- B. An Important Case of Market Failure: The World's Fisheries
 - 1. "Fish: The Tragedy of the Oceans," *The Economist* (March 19,1994), pp. 21, 22, 24.
 - 2. "Fish Farming: The Promise of a Blue Revolution," *The Economist* (Aug. 9, 2003),19-22
 - 3. J. Tierney, "A Tale of Two Fisheries," *New York Times* (Aug. 27, 2000).
 - 4. "Fishing and Conservation: A Rising Tide," *The Economist* (Sept. 20, 2008), 97-8.
 - 5. *RFF Reader*, Ch. 23
- C. The Role of Property Rights and the Coase Theorem
 - 1. Kolstad, ch. 6
- D. A Brief Introduction to Benefit-Cost Analysis
 - 1. Kolstad, Ch. 4 (pp. 68-74).
 - 2. *RFF Reader*, Chs. 3, 4, and 5

III. Environmental Regulation: The Selection of Policy Instruments

- A. Taxes (Fees) and Subsidies
 - 1. Kolstad, Ch. 7
- B. Taxes versus a System of Marketable Permits
 - 1. Kolstad, Chs. 8 and 9
 - 2. *RFF Reader*, Ch 9
- C. Uncertainty and the Choice of Policy Instruments
 - 1. Kolstad, Ch. 10
- D. Market Incentives in Practice
 - 1. *RFF Reader*, Chs. 10, 11, 13, and 14
 - 2. D. Burtraw and K. Palmer, "SO₂ Cap-and-Trade Program in the United States: A 'Living Legend' of Market Effectiveness," in Harrington et al., eds., *Choosing Environmental Policy...*, Ch. 2.
- E. Environmental Federalism
 - 1. *RFF Reader*, Chs. 19, 20, 21, 22

IV. Global Climate Change: An Economic Perspective

- A. Some Background and an Overview
 - 1. *RFF Reader*, Chs. 36 and 37
- B. The Design of Policies to Address Global Climate Change
 - 1. *RFF Reader*, Chs. 38, 39, and 40
 - 2. "Economic Focus: Doffing the Cap," *The Economist* (June 16, 2007), p. 86

V. International Environmental Issues

- A. International Trade, Economic Development, and the Environment
 - 1. Kolstad, Ch. 13
 - 2. *RFF Reader*, Ch. 47
- B. Biodiversity
 - 1. *RFF Reader*, Chs. 28 and 29
- C. Economic Growth and the Environment: Sustainable Development
 - 1. *RFF Reader*, Chs. 41 and 42

VI. Setting Standards for Environmental Quality: The Use of Benefit-Cost Analysis

- A. Measuring the Demand for Environmental Quality
 - 1. Kolstad, Chs. 15, 16, and 17
- B. The Contingent-Valuation (CV) Approach
 - 1. Kolstad, Ch. 18
 - 2. *RFF Reader*, Ch. 7

VII. Further Topics in Environmental Policy

- A. Economics of Monitoring and Enforcement
 - 1. Kolstad, Ch. 11
- B. Risk Analysis and Insurance
 - 1. Kolstad, Ch. 12
- C. Economy-Wide Effects of Environmental Policy
 - 1. Kolstad, Ch. 14
 - 2. *RFF Reader*, Chs. 17 and 18