This course includes two major parts. The first part introduces the economic theory of externalities. We will emphasize theoretical developments in the literature, but will also cover policy issues, especially the effectiveness of different policy instruments in overcoming externalities. After a brief discussion of Pigouvian and Coasian theories, we study complications of Pigouvian taxes and Coasian bargaining under more realistic settings, including the existence of other distortions, uncertainty and market imperfection. We then discuss other policy instruments including standards and tradable permits, imperfect enforcement, and asymmetric information. We will also discuss important empirical papers.

The second part covers the theory and practice of environmental valuation. I will distribute the reading list towards the middle of the semester.

We will discuss some of the “starred” papers. Other papers may also be important, and some of them may be the classical papers in the field. I will inform you the papers to be discussed in greater detail a week or so in advance. You are strongly encouraged to read the papers before each class.

**Texts:**


The classic book on environmental economics. Need to combine it with new developments, i.e. journal articles.


The classical book on environmental valuation. Covers both theory and some econometrics.

Useful books (not required)


Comprehensive review of the field.


Offers good treatment on stock externalities and nonpoint source pollution.


Cook book approach to valuation methods.


Collection of easily accessible papers, mostly at intuitive levels rather than involving heavy math. Great source for up-to-date policy issues and particular pollution problems.

**Survey Papers:**

A nice (but a bit old) survey article covering some of the field is:

The following paper provides a rather comprehensive reading list in the fields of both resource and environmental economics. If you are hungry for more papers than covered in this course, this paper is a good place to start searching.


The May 2000 issue of JEEM (vol 39, a special 25th anniversary issue) contains several articles on both resource and environmental economics. I highly recommend the paper by Robert Hahn. In fact, you should glance through all of the papers in this issue.

Accessibility:

Many of the older papers (more than three to five years old, depending on the journal) are available at JSTOR: www.jstor.org. The e-journals on the ISU library homepage carry most of the other papers.

I. BASIC THEORY OF EXTERNALITIES

* Baumol and Oates, Ch. 2, 3, 4.


A. Tradition of Pigou


Xepapadeas, Ch. 2, Sec. 1-3.


B. Coase Theorem


II. EXTENSIONS / COMPLICATIONS OF PIGOUVIAN TAXES

A. Nonconvexities

* Baumol and Oates, Ch. 8


*P. Burrows, "Nonconvexity Induced by External Costs on Production: Theoretical Curio or Policy Dilemma?" JEEM 13 (1986).

B. Entry and Exit

* Baumol and Oates, Ch. 14.


*A.M. Polinsky, "Notes on the Symmetry of Taxes and Subsidies in Pollution Control," Canadian J. Econ., 1979, 12(1), pp. 75-82.

Kohn, R. E., “Do we need the entry-exit conditions on polluting firms?” JEEM, 27 (1994), pp. 92-7

C. Second Best Pigouvian Tax

1. Other distortionary taxes and double dividend


2. Indirect vs. direct taxes


*Ye Feng, Don Fullerton, and Li Gan “VEHICLE CHOICES, MILES DRIVEN AND POLLUTION POLICIES” NBER Working Paper 11553, 2005

Don Fullerton, Li Gan, and Miwa Hattori “A Model to Evaluate Vehicle Emission Incentive Policies in Japan,” working paper, TAMU Econ., 2007

3. Monopolist Polluter

* Baumol and Oates, Ch. 6.


4. Oligopolist Polluters

* Xepapadeas A., Advanced Principles in Environmental Policy, Edward Elgar 1997, Ch. 5.3.


D. Uncertainty

1. Prices vs. Quantities

* Baumol and Oates, ch. 5.


2. Nonlinear tax schedules


III. EXTENSION OF THE COASE THEOREM

A. Information and Games


B. Bargaining


Fudenberg & Tirole, Chapter 10, "Sequential Bargaining and Incomplete Information."

C. Cooperative Games


D. Experimental Tests of the Coase Theorem


IV. OTHER POLICY INSTRUMENTS

A. Environmental Quality Standards


1. Impacts on Innovation and Technological Progress

Paul Downing and Lawrence White, "Innovation in Pollution Control." JEEM 13 (1986) 18-29.

*Scott Milliman and Raymond Prince, "Firm Incentives to Promote Technological Change in Pollution Control," JEEM 17 (1989) 247-265.


2. Political Economy of Standards


3. Imperfect Enforcement


B. Tradable Emission Permits


Hahn, Robert W. “A New approach to the design of regulation in the presence of multiple objectives,” *JEEM* 17(1989)

1. Impacts on Innovation


2. Market Power


3. Imperfect Enforcement


4. Banking


V. POLICY DESIGN UNDER ASYMMETRIC INFORMATION

A. Cost Revelation


B. Nonpoint Source Pollution

* Xepapadeas A., Advanced Principles in Environmental Policy, Edward Elgar 1997, Ch. 4.


**VI. ECONOMICS OF ENFORCING POLLUTION CONTROL LAWS**


**VII. SELECTED EMPIRICAL STUDIES**


**VIII. INTERNATIONAL DIMENSIONS OF ENVIRONMENTAL POLICY**