

Environmental Economics
Christophe Deissenberg
deissenb@univ-aix.fr

IMPORTANT: Outside-of-class communication between you and me will normally be made by e-mail. The students are **REQUIRED** to send me, at a beginning of the year, an e-mail indicating "Participant EE" as the object (leave the body blank unless you have specific questions to ask at that time). Likewise, they must download in advance the required lectures when available on the web, and Xerox the book chapters and articles indicated in the syllabus.

1. Pre-requisites:

Good background in intermediate micro-economic theory.

2. Objectives:

At the end of the course the participants should be able to understand and explain: (i) the corrective incitation mechanisms underlying alternative approaches to pollution management, including those based on ambient charges and pollution damage liability rules; (ii) the potential role of voluntary agreements in protecting environmental resources; (iii) the problems and prospects for efficient pollution control using pollution regulation, taxes and marketable pollution permits; (v) theoretical and practical approaches to the problems posed by trans-boundary pollution. Particular attention, at the theoretical and empirical levels, will be given to global warming and the provisions of the Kyoto protocol.

3. Course outline

- A. Voluntary Agreements
- B. Pigouvian Fees and Regulation
- C. Marketable Permits
- D. Regulation under Uncertainty
- E. International/Interregional Competition
- F. Global Warming and the Kyoto protocol

4. Textbook

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

This book is at the (advanced) undergraduate level. Do not be surprised if some of the (mandatory!) additional readings and the presentations in class are at a higher level.

Important additional general reference books are:

William J. Baumol and Wallace E. Oates, *The Theory of Environmental Policy*, 2nd edition, Cambridge University Press, 1988.

Paul Portney and Robert Stavins, *Public Policies for Environmental Protection*, Second Edition, Resources for the Future, Washington D.C., 2000.

5. Required reading

A. Voluntary Agreements

- Barrett, “Self-enforcing international environmental agreements”, *Oxford Economic Papers*, 46, 878-894, 1994
- Bergstrom, Blume and Varian, “On the Private Provision of Public Goods,” *Journal of Public Economics* 29:25-49, 1986
- Ferraro and Simpson: “Cost-Effective Conservation”, *Resources* 143, 2001
- Segerson and Li, “Voluntary Approaches to Environmental Protection,” in Folmer & Tietenberg (Eds), *The International Yearbook of Environmental & Resource Economics*, 1999, pp273-81 only.
- List, Bulte, and Shogren, “‘Beggar Thy Neighbor’: Testing for Free Riding in State-Level Endangered Species Expenditures,” *Public Choice* 111:303-315, 2002.
- Segerson and Miceli, "Voluntary Environmental Agreements: Good or Bad News for Environmental Protection?" *Journal of Environmental Economics and Management* 36:109-30, 1998

B. Quotas, Pigouvian Fees and Regulation

- Kolstad, Chapters 7 and 8
- Oates and Portney, “The Political Economy of Environmental Policy,” RFF Discussion Paper 01-55, 2001., <http://www.rff.org/rff/Documents/RFF-DP-01-55.pdf>

C. Marketable Permits

- Kolstad Chapter 9
- Baumol and Oates Chapter 12
- McGartland and Oates, "Marketable Permits for the Prevention of Environmental Deterioration", *Journal of Environmental Economics and Management* 12, 207-228, 1985.
- Millman ND Prince, “Firm incentive to promote technological change in pollution control”, *Journal of Environmental Economics and Management* 17, 1989, 247-265
- Tietenberg, *Emissions Trading: An Exercise in Reforming Pollution Policy*, RFF 1985

D. Regulation under Uncertainty

- Kolstad Chapter 12
- Baumol and Oats Chapter 13
- Pizer, "Choosing Price or Quantity Controls for Green House Gases", RFF Climate Issues Brief 17, 1999
- Segerson, "Uncertainty and Incentives for Nonpoint Pollution Control," *Journal of Environmental Economics and Management*, 15: 87-98 (1988).

E. International/Interregional Competition

- Kolstad, Ch 13
- Stavins, Ch 24
- Barrett: "Montreal vs. Kyoto," in *Global Public Goods*, 1999.
- Larry Summers memo <http://www.whirledbank.org/ourwords/summers.html>

F. Global Warming and the Kyoto Protocol

- Barrett, "The Political Economy of the Kyoto Protocol", *Oxford Review of Economic Policy*, 14, 4, 20-39, 1998
- Barrett; "Montreal vs. Kyoto: International Co-operation and the Global Environment", in Kaul, Grunberg and Stern (eds.), .): *Global Public Goods: International Co-operation in the 21st Century*, Oxford University Press 1999
- Bernard et al., "A Two-Level Dynamic Game of Carbon Emissions Trading between China, Russia, and Annex B Countries", NCCR-WP4 Working Paper 11, 2002.
- Caplan, Cornes, and Silva, "How Effective and Efficient can the Kyoto Protocol be in Controlling Global Carbon Dioxide Emissions", Research Paper 2001/23, Leverhulme Center
- Ellerman and Decaux, "Analysis of Post-Kyoto CO2 Emission Trading Using Marginal Abatement Curves", MIT Joint Program on the Science and Policy of Global Change, Cambridge, MA., 1998
- Dudek and Wiener, "Joint Implementation, Transaction Costs, and Climate Change", OECD/GD(96)173, Paris, OECD, 1996
- Finus, "Game Theory and International Environmental Cooperation: Any Practical Application?", Diskussionsbeitrag No 282, 2001, Fernuniversitaet Hagen
- Holtsmark and Hagem, "Emissions trading under the Kyoto Protocol, CICERO Report 1998:1
- Michaelowa, "Joint implementation: A promising instrument for climate protection", *Intereconomics* 4, 163-171, 1995

5. Assessment

Final 1 hours examination. You will be asked to solve two exercises.