

THE GEORGE WASHINGTON UNIVERSITY

Department of Economics

Natural Resource and Environmental Economics, ECON 2136.10

Spring 2012

TuTh 11:10-11:25 pm, Monroe 251

PROFESSOR: Arun Malik (Office Hours: Tu and Thu, 4:00-5:30 pm and by appointment, Gov 305, amalik@gwu.edu)

COURSE DESCRIPTION. The course will apply the basic tools of microeconomics to analyze a variety of environmental and natural resource problems and policies. Economic reasoning will be used to examine the causes of environmental/resource problems, the consequences of these problems, and the measures for dealing with them.

PREREQUISITES. Econ 1011 (Econ 11 in the old numbering system), Principles of Microeconomics, is a prerequisite for the course. Students must be familiar with the material in Econ 1011 on the theory of the firm and the functioning of competitive markets.

LEARNING OBJECTIVES. By the end of this course, you should understand: (1) how environmental and resource problems arise because of market and government failures; (2) the techniques used by economists to attach monetary values to environmental and resource degradation; (3) the role of benefit-cost analysis in assessing the merits of various forms of government intervention; and (4) the relative merits of alternative policies for mitigating environmental and resource problems. In addition, you should be able to critically evaluate, from an economic standpoint, proposed policies for mitigating environmental and resource problems.

REQUIREMENTS AND GRADING. Approximately four homework sets will be assigned over the course of the semester. Homework will not be collected, however, detailed answer sheets will be provided. Feel free to ask me about problems you have trouble with. Depending on circumstances, I will go over them in class or during office hours.

Four quizzes based on the homeworks, readings, and lecture notes will be given over the course of the semester. Each quiz will be announced one week before it is given. There will be **no make-up quizzes**, however, the lowest quiz grade will be dropped.

In addition to the quizzes, a **midterm exam** and a **final exam** will be given. The midterm exam is tentatively scheduled for Thursday, March 8th. **Make-up exams will be given only in extraordinary circumstances, and only if arranged at least one week in advance.**

The course grade will be calculated using the following weights:

midterm exam - 35%
quizzes - 30%
final exam -35%.

TEXTBOOKS. (1) James Kahn, *The Economic Approach to Environmental and Natural Resources*, 3rd ed., Thomson-Southwestern, 2005. (2) Eban Goodstein, *Economics and the Environment*, 6th ed., Wiley, 2010. The abbreviations JK and EG, respectively, are used when referring to these texts below.

TOPICS AND READINGS. A tentative list of topics to be covered and accompanying readings are presented below. Readings are divided into two categories -- required and optional. **Required readings are marked with an asterisk.** Readings outside the texts will either be available online or handed out in class.

Topic 1: Background

*JK, Chap. 1

*EG, Chaps. 1 and 2

*Robert Dorfman, "Some Concepts from Welfare Economics," in *Economics of the Environment: Selected Readings*, 3rd ed., ed. by R. Dorfman and N.S. Dorfman, Norton, 1993, pp. 86-96.

*Bjorn Lomborg, "The Truth About the Environment," *The Economist*, August 2, 2001.

*John Rennie, "Misleading Math about the Earth," *Scientific American*, vol. 286, issue 1, January 2002.

*Bjorn Lomborg, "The Skeptical Environmentalist Replies," *Scientific American*, vol. 286, issue 5, May 2002. [You can read more about the book and the controversy surrounding it at: <http://www.lomborg.com>.]

David Pearce and Kerry Turner, "The Circular Economy," Chapter 2 in *Economics of Natural Resources and the Environment*, Johns Hopkins University Press, 1990.

Topic 2: Property Rights and Market Failures

*EG, Chap. 3 including Appendix 3A

*JK, Chap. 2 (only to p. 33)

*John H. Dales, "The Property Interface," Chapter V in *Pollution, Property, and Prices*, University of Toronto Press, 1968.

*George Monbiot, "The Tragedy of Enclosure," *Scientific American*, January 1994.

*Matt Ridley and Bobbi S. Low, "Can Selfishness Save the Environment?" *The Atlantic Monthly*, September 1993, pp. 76-86.

Garret Hardin, "The Tragedy of the Commons," *Science*, Vol. 162, No. 3859, December 13, 1968. Available online at: http://www.garretthardinsociety.org/articles/art_tragedy_of_the_commons.html

Topic 3: Biodiversity

*JK, Chap. 14

*"Game Conservation in Africa: Horns, Claws, and the Bottom Line," *The Economist*, September 2nd 2010.

*"Keeping it in the Community," *The Economist*, September 23rd 2010.

Conservation International, "Encouraging Private Sector Support for Biodiversity Conservation: The Use of Economic Incentives and Legal Tools," 1996.

Moran, D., and D. Pearce, *The Value of Biodiversity*, World Conservation Union, Biodiversity Programme. London, UK: Earthscan Publications, 1994.

Topic 4: Government Failures

_____ *Gareth Porter, "Natural Resource Subsidies, Trade and Environment: The Cases of Forests and Fisheries," *Journal of Environment and Development*, vol. 6, no. 3, September 1997. **Only Parts I and II of the article are required reading.**

*David Anthoff and Robert Hahn, "Government failure and market failure: on the inefficiency of environmental and energy policy," *Oxford Review of Economic Policy*, vol. 26, no.2, 2010. Available online at: http://www.sci.manchester.ac.uk/medialibrary/sci_discussionpaper_no2.pdf

Frances Cairncross, "Government Failures," Chap. 3 in *Costing the Earth*, Harvard Business School Press, 1992.

Theodore Panayotou, "The Economics of Environmental Degradation: Problems, Causes and Responses," in *Environmental Economics: A Reader*, ed. by Anil Markandya and Julie Anderson, St. Martin's Press, 1992.

Norman Myers with Jennifer Kent, *Perverse Subsidies: Tax \$s Undercutting our Economies and Environments Alike*, International Institute for Sustainable Development, Winnipeg, Canada, 1998. Executive summary available online at: <http://www.brocku.ca/envi/db/envi1p90/readings/Perverse%20Subsidies%20Executive%20Summary.pdf>

Topic 5: Benefit-Cost Analysis

*JK, Chap. 4

*EG, Chaps. 8, 9, 10

*Steven Rhoads, "Kind Hearts and Opportunity Costs," *Across the Board*, December 1985, pp. 40-47.

*Steven Kelman, "Cost-Benefit Analysis: An Ethical Critique," *Regulation*, Vol. 10, Jan./Feb 1981, pp. 33-40, along with the replies to this article that appeared in the March/April, 1981 issue of *Regulation*.

*Herman Leonard and Richard Zeckhauser, "Cost-Benefit Analysis Defended," *QQ: Report from the Center for Philosophy and Public Policy*, University of Maryland at College Park, Vol. 3, No. 3 (Summer 1983), pp. 6-9. Reprinted in *The Environmental Ethics and Policy Book*, 3rd ed. (D. VanDeVeer and C. Pierce, eds.), Wadsworth, 2003.

Lisa Heinzerling and Frank Ackerman, "Pricing the Priceless: Cost-Benefit Analysis of Environmental Protection," *University of Pennsylvania Law Review*, Vol. 150, No. 5 (May, 2002), pp. 1553-1584. Available online at: http://ase.tufts.edu/gdae/publications/articles_reports/C-B%20pamphlet%20final.pdf

Topic 6: Economics of Pollution Control

*JK, Chap. 3

*EG, Chaps. 4, 16 including Appendix 16A, 17

*Harrington, Winston and Richard D. Morgenstern. "Economic Incentives Versus Command and Control: What's Best for Solving Environmental Problems?" *Resources*, Fall/Winter 2004, pp. 13-17.

*Mark Sagoff, "Controlling Global Climate: The Debate over Pollution Trading", Institute for Philosophy and Public Policy, University of Maryland, *The Report*, Vol. 19, No. 1, Winter 1999.

*Richard Walker, "The Illusion of Effluent Charges, or Regulatory Dilution is No Solution to Pollution," _____ *Antipode*, Vol. 14, No. 2, 1982, pp. 12-20.

Topic 7: Overview of U.S. Environmental Policy

*EG, Chaps. 12, 13 and 14

*Nicholas Muller and Robert Mendelsohn, "Weighing the Value of a Ton of Pollution," *Regulation*, vol. 33, no. 2, Summer 2010.

Paul Portney Robert Stavins, *Public Policies for Environmental Protection*, 2nd ed, Resources for the Future, 2000.

J. Clarence Davies and Jan Mazurek, *Pollution Control in the United States: Evaluating the System*, Resources for the Future, 1999.

Topic 8: Global Environmental Problems

*JK, Chap. 7

*EG, Chap. 22

*Nicholas Stern, "Stern Review on the Economics of Climate Change, Executive Summary," Her Majesty's Treasury, October 2006. Only available online at:
http://www.hm-treasury.gov.uk/media/4/3/Executive_Summary.pdf

*Robert Mendelsohn, "A Critique of the Stern Report," *Regulation*, Vol. 29, No. 4, Winter 2006-2007. Only available online at: <http://www.cato.org/pubs/regulation/regv29n4/v29n4-5.pdf>

*Nicholas Stern, "Postscript." Only available online at:
<http://webarchive.nationalarchives.gov.uk/+http://www.hm-treasury.gov.uk/d/Postscript.pdf>

*"Adapting to Climate Change: Facing the Consequences," *The Economist*, November 25th 2010.

*Ian Parry and William Pizer, "Emissions Trading versus CO2 Taxes versus Emissions Standards," Resources for the Future, September 2007. Only available online at:
http://www.weathervane.rff.org/Backgrounders/Oct07/Backgrounder_TaxesPermitsStandards.pdf

Special Issues on Climate Change of *World Economics: The Journal of Current Economics and Policy*, Vol. 7 No. 4 (2006) and Vol. 8 No. 1 (2207).

Martin Weitzman, "A Review of the *Stern Review on the Economics of Climate Change*," *Journal of Economic Literature* Vol. 45, No. 3, September 2007.

Raymond Kopp and Jennifer Thatcher, *The Weathervane Guide to Climate Policy—An RFF Reader*, Nov. 2000. Only available online at: www.weathervane.rff.org/misc/weathervaneguide/index.htm

Topic 9: Exhaustible Resources and Energy

*JK, Chap. 2 (pp. 32-37), Appendices 2A and 2B, Chap. 18

*David Demming, "Are We Running Out of Oil?" Policy Backgrounder No. 159, National Center for Policy Analysis, January 29, 2003. Only available online at: <http://www.ncpa.org/pub/bg/bg159/bg159.pdf>

*"Oil in Troubled Waters," *The Economist*, April 28, 2005.

*"Natural Gas: An Unconventional Glut," *The Economist*, March 11th, 2010.

Topic 9: Exhaustible Resources and Energy (cont.)

*“Renewable Promise,” *OECD Observer*, March 2007, only available online at:
http://www.oecdobserver.org/news/fullstory.php/aid/2108/Renewable_promise.html

*“The Future of Biofuels: The Post-Alcohol World,” *The Economist*, October 28th 2010.

Energy Information Administration, “A Primer on Gasoline Prices,” DOE/EIA X-040, May 2006. Only available online at: http://www.eia.doe.gov/bookshelf/brochures/gasolinepricesprimer/eia1_2005primerM.html

James Hamilton, “Oil Futures and the Future of Oil,” June 9, 2005, only available online at:
http://www.econbrowser.com/archives/2005/06/oil_futures_and.html

John M. Hartwick and Nancy D. Olewiler, *The Economics of Natural Resource Use, 2nd ed.*, Addison-Wesley, 1998, Chapters 8 and 9.

Stephen W. Salant, “The Economics of Natural Resource Extraction: A Primer for Development Economists,” *The World Bank Research Observer*, Vol. 10, No. 1, Feb. 1995, pp. 93-111.

ONLINE MATERIALS. Some course materials will be made available through GW’s online Blackboard system. This system can be accessed at the following URL:

<http://blackboard.gwu.edu/webapps/login>

You need to have a GW email account to access Blackboard. If you do not already have one, information on obtaining one is provided at the above URL.