

Environmental and Resource Economics

AREC 534 – E-campus



Instructors: William Jaeger & Annah Latané
Department of Agricultural & Resource
Economics
Oregon State University
213 Ballard Extension Hall
Corvallis, OR 97331
wjaeger@oregonstate.edu

Syllabus, Assignments and Information – Spring 2014

Course Description

This course examines environmental and natural resource issues emphasizing the role of economics in understanding their causes, consequences, and potential solutions. Sustainable natural resource use, climate change, biodiversity, clean air and water, overfishing, deforestation, ecosystem services, are among the topics examined using the tools of economic analysis. By understanding the causes of environmental problems (externalities, market failure, tragedy of the commons, etc.) economic analysis can lead directly to recognizing a range of potential solutions (regulation, collective management, property rights and market-based incentives). Methods for measuring environmental damages and estimating the cost-effectiveness of alternative solutions are shown to be influential ways to make better policy decisions for managing our natural resource base.

The course begins with a review of core economic concepts, including tradeoffs, efficiency, opportunity cost, profits and consumer surplus. We then consider market failures—failure of a market to achieve efficiency—that can arise with externalities, public goods and common property resources. We consider policies designed to address externality problems in the context of air and water pollution and conclude with an examination of non-market valuation techniques and their use in policy development and evaluation. We look at static and dynamic models of natural resource allocation, including the class of well-known models used to study optimal management of renewable resources such as fisheries and forests. The models examined in this class provide a framework for examining policies designed to achieve socially optimal outcomes. We examine the advantages or disadvantages of differing institutions (private property, markets, regulations and public policy). The ethical and moral underpinnings of these policies will be considered, as well as the goal of sustainability and equity. In addition to considering the theoretical basis for policy design, we will evaluate some existing and proposed policies in several case studies (e.g., climate change, the Endangered Species Act, protected areas and Clean Air Act regulations, fisheries and water, land use regulation).

Target Audience

The course is designed for graduate students or professionals in the private, public or non-governmental sectors who do not have extensive training in economics, but who would benefit from exposure to the economics of environmental and natural resource management, especially with a view toward policy and solutions to current problems. This course will be of interest to graduate students in fields such as law, environmental sciences, environmental studies, ecology, forestry, engineering, marine resource management, geosciences, public policy, and others involved in environmental protection, natural resource management, and related public policy issues.

Learning Outcomes

- To understand, in detail, the economic concepts and frameworks that relate to an efficient allocation of resources
- To be able to identify and understand the different kinds of “institutions” that can contribute to achieving efficiency with respect to private goods, public goods, and common pool resources (property rights, laws, markets, regulation, informal rules)
- To be familiar with concepts of benefits and costs, and to understand the methods for estimating these, and to recognize the differences, and appropriate use of, benefits or costs that are: marginal, average, total, discounted, long-run or short-run
- To be familiar with the main types of policy tools that governments can use to correct “market failures” related to the environment, and to have an appreciation for the advantages and disadvantages each may have in different settings
- To recognize the philosophical underpinnings of normative economic analysis such as benefit-cost analysis, and to have an appreciation for its relationship to concepts of equity, sustainability, fairness, rights and freedoms.

Prerequisites: AREC 311 or its equivalent, or permission of the instructor.

Credits: 3

Course Delivery Format

This course is delivered via the University’s e-campus interface, Blackboard. Within the course Blackboard website you will access learning materials including video lectures, tutorials, and syllabus; discuss issues; submit assignments; take quizzes; email other students and the instructor; participate in online activities. To preview how an online course works, visit the [Ecampus Course Demo](#). For technical assistance, Blackboard and otherwise, see <http://ecampus.oregonstate.edu/services/technical-help.htm>.

Readings

The main textbook for this course is Jaeger, W.K. 2005. *Environmental Economics for Tree Huggers and Other Skeptics*, Island Press (available in paperback). We will also be reading Wagner, G., 2011. *But Will the Planet Notice: how smart economics can save the world.*” And there is also a reading list of assigned readings from journals and other sources, and these will be made available on Blackboard or by other means.

Grading

Grading is A through F. Your grade will be based on problem sets (35%), two mid-term exams (20% each), and a significant writing assignment at the end of the term (25%).

Class schedule, readings and assignments -- Ecampus					
Week #	Topic	Text assignment	Other assignments	Recommended	Problem sets
1	Introduction; marginal value				
		Jaeger (text), Preface and Chapter 1;	Fullerton, Don, and Robert Stavins (1998) "How economists see the environment," Nature, 395, p. 433-434	Krutilla, J. 1967. Conservation Reconsidered. Amer. Econ. Rev., 57(4): 777-786.	Problem set 1 available
1	An economists approach to environmentalism				
			Gernot Wagner, "But Will the Planet Notice?", pages 3-78.		
2	Tradeoffs, efficiency, demand; Production, profit, supply				
		Jaeger, chapter 2 (Alert: a typo on page 30 – shift "to the left" not to the right); Jaeger, chap 3			Problem set 2 available
2	Market failure: externalities and public goods				
		Jaeger, chap 5			Problem set 1 due; work on problem set 2.
3	Property rights				
		Jaeger, chap 9	R. Coase, 1960. The Problem of Social Cost. J. of Law and Economics;		Problem set 2 due; Problem set 3 available
			Dolsak, N and Elinor Ostrom, 2003. The challenges of the commons. In The Commons in the New Millennium. Dolsak, Ostrom and McKay (Eds). MIT Press. G. Hardin, "Tragedy of the Commons," Science, 162:1243-1248 (13 Dec 1968)		

<u>Week #</u>	<u>Topic</u>	<u>Text assignment</u>	<u>Other assignments</u>	<u>Recommended</u>	<u>Problem sets</u>
4	FIRST MIDTERM, Pollution control policies				
		Jaeger, chap 10; Wagner Chapter 5 & 7; "Curious Company Kept" and "Cars (and planes)"	Mankiw, 2008. "Smart Taxes: an open invitation to join the Pigou Club."		Problem set 3 due; Problem set 4 available
			The SO2 Allowance Trading System: the Ironic History of a Grand Policy Experiment. R. Schmalensee and R. Stavins 2013 JEP.		
5	Time and sustainability				
		Jaeger, chap 4 and 6	G. Heal, 2012. Reflections--Defining and Measuring Sustainability. Review of Environmental Economics and Policy, Vol. 6(1): 147-163. Goulder and Stavins, An Eye on the Future, Nature Vol 419, 2002.		Problem set 4 due; Problem set 5 available
5	Land and Forests				
		Jaeger chap 11	Simpson, R. David, 1997. Biodiversity Prospecting: Shopping the Wilds Is Not the Key to Conservation. Resources. Resources for the Future, Washington DC.	Field, Barry C. (2008) Natural Resource Economics: An Introduction, Waveland Press, Chapter 12: Forest Economics, p. 219-238	
6	Fisheries				
		Jaeger chap 12; Wagner Chapter 4 "Fewer Fish, More dough"	Costello, et al., "Can Catch Shares Prevent Fisheries Collapse?" Science 2008. Video "How to Save a Dying Ocean"		Problem set 5 due; Problem set 6 available
			www.youtube.com/watch?v=MI80VVpTGkQ&feature=player_embedded		

<u>Week #</u>	<u>Topic</u>	<u>Text assignment</u>	<u>Other assignments</u>	<u>Recommended</u>	<u>Problem sets</u>
7	Policy failure				
		Jaeger, chap 13	Charles Wolf, 1979. Theory of Non-market failure. The Public Interest. Spring.		Problem set 6 due
			Jaeger and Egelkraut, 2010. Biofuel Economics with Multiple Objectives & Unintended Consequences		
8	SECOND MIDTERM, Economic growth and development				
		Jaeger, chap 7; Wagner chapter 6 "Mind versus matter"	Carson, Richard, 2010. The Environmental Kuznets Curve: Seeking Empirical Regularity and Theoretical Structure	Jaeger, Kolpin & Siegel, "A new look at the Environmental Kuznets Curve"	Problem set 7 available
8	Valuation of non-market goods				
			Holland, Sanchirico, Johnston and Joglekar, Chapter 4 "Nonmarket valuation of ecosystem services and environmental resources", in Economic Analysis for Ecosystem-based Management, RFF Press, 2010. From Exxon to BP: Has Some Number Become Better than No Number? Catherine L. Kling, Daniel J. Phaneuf, and Jinhua		
9	Climate change and the green economy				
		Jaeger, chap 14	Krugman, Building a Green Economy; IPCC 4th Assessment, Working Group III Summary for Policymakers 2007		Problem set 7 due
9	Economics and morality				
		Jaeger, chap 16, 17	Michael Sandel, It's Immoral to Buy the Right to Pollute (with replies), New York Times, Dec. 17, 1997.		
10	Writing assignment				

Academic conduct

Students are expected to conduct themselves in all aspects of this class in accordance with Oregon State University expectations. See <http://oregonstate.edu/admin/stucon/achon.htm> for details. The course requires independent work when it comes to exams, homework, and other written work. To be clear on what constitutes plagiarism see <http://oregonstate.edu/admin/stucon/plag.htm>.

Students with disabilities

Students with documented disabilities (approved through the OSU SDD office) are responsible for contacting the faculty member in charge of the course prior to or during the first week of the term to discuss accommodations. Students who believe they are eligible for accommodations but who have not yet obtained approval through SSD should contact SSD immediately at 541-737-4098.

Course schedule

E-campus students need to complete the course within the time frame of the term they are enrolled, as set out in the class schedule. Exams must be taken during the timeframe indicated. Make up exams or late assignments will only be allowed in extreme or unusual circumstances.

Ground rules for online communications and participation

Online threaded discussions are public messages, and all writings in this area will be viewable by the entire class or assigned group members. If you prefer that only the instructor sees your communication, send it to me by email, and be sure to identify yourself and the class. Posting of personal contact information is discouraged (e.g. telephone numbers, address, personal website address). Online Instructor Response Policy: I will check email frequently and will respond to course-related questions within 24 hours. Observation of "Netiquette": All your online communications need to be composed with fairness, honesty and tact. Spelling and grammar are very important in an online course. What you put into an online course reflects on your level of professionalism. Here are a couple of references that discuss:

- writing online: <http://goto.intwg.com/>
- netiquette: <http://www.albion.com/netiquette/corerules.html>.

Please check the Announcements area and the course syllabus before you ask general course "housekeeping" questions (i.e. how do I submit assignment 3?). If you don't see your answer there, then please contact me.

For a productive and effective online classroom, remember that the discussion board is your space to interact with your colleagues related to current topics or responses to your colleague's statements. It is expected that each student will participate in a mature and respectful fashion.