

Spring 2013

Dr. Kohlhasse
University of Houston

ECON 3363, Section 20443
ENVIRONMENTAL ECONOMICS
(class meets MW 1:00-2:30pm in 111M)

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CLASS: The course is designed to teach students how to think about environmental issues using the framework of economics, especially microeconomics tools. We start with an analysis of market failures and externalities. Next we discuss potential policy approaches to environmental problems such as regulations, taxes, subsidies and marketable permits. We study methods to measure benefits and costs of environmental improvements. Then we apply these concepts to several applications including air pollution, global climate change, water pollution and land contamination.

LEARNING OUTCOMES:

- Students will be able to use economic terminology and models of environmental issues appropriately and correctly.
- Students will be able to analyze and interpret quantitative data about the environment.
- Students will be able to organize and present material in a systematic framework based on environmental economic models.

REQUIRED TEXT:

Scott J. Callan and Janet M. Thomas, Environmental Economics and Management, 6th ed., Southwestern Cengage Learning, 2010, ISBN13: 978-1-111-82667-3. (Buy only the 6th edition.)
digital rentals and echapters are available at
<http://www.cengagebrain.com/shop/search/9781111826673>

PREREQUISITES: The basic requirement is that you have taken an introductory microeconomics course at the college level or that you get permission from me. A course in intermediate microeconomics is highly recommended, but not absolutely necessary.

COURSE EVALUATION: 35% Midterm (Wednesday March 6, 2013, in class)
50% Final (Monday May 6, 2013, 2-5pm, regular classroom)
15% homework sets and experiments

There are two exams: a midterm and a final. The final exam is comprehensive. Exams consist of short problems with discussion. The homework sets ask you to solve problems relating to the economics of environmental issues. You may do homeworks in groups of one to two. We will do at least one in-class experiment, and attendance is required for the experimental sessions.

COURSE POLICY: All assignments are required and must be completed and handed in on time. Original hardcopies of homeworks are required; I do NOT accept electronic submissions of homeworks. Participation in experiments is required. **NO MAKEUP EXAMS!** Any absence from an exam or quiz for medical reasons must be documented by your physician. Any other absence from an exam must be approved by me *in advance* in writing. Unapproved absence from any exam counts as a zero. **All exams are covered by the Honesty code of UH** (see Student Handbook or Undergraduate Catalog or <http://www.uh.edu/academics/catalog/policies/academ-reg/academic-honesty/>).

<u>TOPIC</u>		<u>TEXT/READING</u>
I.	<i>Introduction: What is Environmental Economics?</i>	ch.1
II.	<i>Modeling Environmental Problems</i>	
	A. Review of Market Models	ch. 2
	B. Market Failures	ch. 3
III.	<i>Modeling Solutions to Environmental Problems</i>	
	A. Conventional Solutions: Command and Control Strategies	ch. 4
	B. Economic Solutions: the Market Approach	ch. 5 Schmalensee (1998),* ch. 12 (part)
IV.	<i>Analytic Tools for Environmental Planning</i>	
	A. Environmental Risk Analysis	ch. 6
	B. Assessing Benefits Houston issues	ch. 7, Carson (2012)* Kohlhase handout
	C. Assessing Costs	ch. 8
	D. Benefit-Cost Analysis in Environmental Decision Making	ch. 9
V.	<i>Air Quality</i>	
	A. Defining Air Quality Standards Houston issues	ch. 10 HGAC(2010)* Forswall&Higgins(2005)*
	B. Mobile Sources	ch. 11

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C. Stationary Sources	ch. 12
D. Global Issues: Global Warming and Ozone Depletion	ch. 13
Primer on Climate Change	CBO (2003)*
Economic Effects of Climate Change	Tol (2009)*
VI. Water Quality	parts of chs. 14, 15
VII. Land Quality	parts of chs. 17, 18, 19

***OTHER READINGS** listed below (note: additional articles may be added during the course)

Richard T. Carson, 2012. "Contingent Valuation: A Practical Alternative When Prices Aren't Available." Journal of Economic Perspectives, 26(4): 27-42.

CBO (Congressional Budget Office), "The Economics of Climate Change: A Primer," April 2003, available to download at
<http://www.cbo.gov/sites/default/files/cbofiles/ftpdocs/41xx/doc4171/04-25-climatechange.pdf>

Clayton D. Forswall and Kathryn E. Higgins, "Clean Air Act Implementation in Houston: An Historical Perspective 1970-2005," working paper, Shell Center for Sustainability, Environmental and Energy Systems Institute, Feb. 2005. Available to download at:
http://shellcenter.rice.edu/uploadedFiles/Shell_Center/Reports_and_Publications/SIP_2.pdf

HGAC (Houston-Galveston Area Council), 2010 Air Quality Reference Guide for the Houston-Galveston Area, 7th edition, 2010. Download from <http://www.hgac.com/taq/airquality/documents/2010%20Air%20Quality%20Reference%20Guide2.pdf>

IPCC (Intergovernmental Panel on Climate Change), "Climate Change 2007: Synthesis Report Summary for Policy Makers," 2007, available to download from
http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr_spm.pdf.

Richard Schmalensee et. al., "An Interim Evaluation of Sulfur Dioxide Emissions Trading," Journal of Economic Perspectives, vol. 8, Summer 1998, pp. 53-68. Can download from JSTOR.

Nicholas Stern, "Stern Review on the Economics of Climate Change," published for the Treasury of the United Kingdom, 2006, available to download from http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/sternreview_index.cfm

Richard S. J. Tol, 2009, "The Economic Effects of Climate Change." *Journal of Economic Perspectives*, 23(2): 29-51.

SELECTED INTERNET SITES -- ENVIRONMENTAL ISSUES

Government Agency Sites

<http://www.epa.gov/>

Operated by the U.S. Environmental Agency. Extensive data on all aspects of U.S. environmental issues. If you append "region6" to the address you will reach the EPA's Region 6, which includes Texas.

<http://www.tceq.state.tx.us>

Operated by the Texas Commission on Environmental Quality (before 9/02 known as Texas Natural Resource Conservation Commission, TNRCC). Data on Texas pollution problems. Contains Houston's Clean Air Plans (also called Houston's State Implementation Plans).

http://www.tceq.texas.gov/airquality/airmod/texaqs/texaqs_reports.html

website for 2007 study of Texas Air quality (TexAQS II) sponsored by the State of Texas.

<http://www.greenhoustontx.gov/reports.html>

"Green Houston" site operated by the City of Houston. Contains several reports on local environmental issues.

<http://www.cleanairaction.org/>

Operated by Houston-Galveston Area Council. Information on local area air quality.

Environmental Activist Sites that contain some useful data

<http://www.rtknet.org>

Operated by the OMB-Watch Right-to-Know network (established in 1989 under the Community Right to Know Act). Has various data bases, including the Toxics Release Inventory (TRI), and provides links to other environmental web sites. Can request a community toxics release report by entering city and state.

<http://www.scorecard.org>

Operated by the Environmental Defense Fund. Has U.S. data by county; covers water, air, land pollution. Can request community reports by simply entering a zip code.

<http://www.cechouston.org>

Operated by the Citizen's Environmental Coalition of Houston. Covers local environmental issues.

<http://airalliancehouston.org/>

Air Alliance Houston is the result of a merger between the Galveston-Houston Association for Smog Prevention (GHASP) and Mothers for Clean Air. Excellent coverage of local air issues.