

**SYLLABUS FOR ENVIRONMENTAL AND NATURAL RESOURCE
ECONOMICS
ECO 359M, SPRING 2018 (UNIQUE #33795)**

MAXWELL B. STINCHCOMBE

ORGANIZATION

Basics: We meet Mondays and Wednesdays, from 2 p.m. to 3:30 p.m. in BRB 1.118. The unique number is 33795.

Reaching me: My office is BRB 2.102A, phone number (512)475-8515, my e-mail address is max.stinchcombe@gmail.com.

Professor office hours: Tuesdays 2:30-4:30 p.m. You can also drop-in, and/or make an appointment.

Teaching Assistant: Yingda Zhai, yingdazhai@utexas.edu.

TA office hours: Tuesdays, 9-11 a.m. in CBA 1.306A.

Texts: The required textbook for this class is Charles Kolstad's *Environmental Economics*, 2nd ed, Oxford University Press (2011). I will also distribute several required and supplemental readings throughout the semester.

Evaluation: There will be 5 homework assignments, one due roughly every 3 weeks (30%), one in-class mid-term, Wednesday March 28, 2017 (20%), and a final exam, tentatively scheduled for Thursday, May 10, 9 a.m. to noon. (50%), place TBA.

- (1) Solutions to homework assignments will be posted after the lecture time in which they are due. Therefore, late homeworks will not be accepted.
- (2) I do not give make-up exams. If you must miss the mid-term exam for university business, please make arrangements with me well ahead of time.
- (3) Missing the final exam means missing half of the credits in the course. This will result in a failing grade.
- (4) By UT Austin policy, you must notify me of your pending absence at least fourteen days prior to the date of observance of a religious holy day. If you must miss a class, an examination, a work assignment, or a project in order to observe a religious holy day, I will give you an opportunity to complete the missed work within a reasonable time after the absence.

E-mail: e-mail is recognized as an official mode of university correspondence; therefore, you are responsible for reading your e-mail for university and course-related information and announcements. You are responsible to keep the university informed about changes to your e-mail address. You should check your e-mail regularly and frequently, at minimum twice a week, to stay current with university-related communications, some of which may be time-critical. You can find UT Austin's policies and instructions for updating your e-mail address at <http://www.utexas.edu/its/policies/emailnotify.php>

Background: I will assume that you have had a good introduction to microeconomics, especially the utility maximization foundation of the theory of consumer choice and the profit maximization theory of the firm, and that you have a good working knowledge of partial derivatives and differential calculus. We will also use probability calculations.

Topics: The course is an introduction to the methods economists use in the analysis of resource and environmental economics. The course can be divided (roughly) into 5 sections: 1) Overview and tools; 2) The equi-marginal principle in the analysis of externalities and public goods; 3) Estimating benefits, costs, and demand for environmental and public goods; 4) Optimal design and implementation of regulations; 5) Audits, enforcement, and dynamics. We study these in the interest of learning the basic economics of, and the policies for, managing fisheries, forests, agricultural practices, water, waste, stock pollutants, and non-renewable and renewable resources.

Academic Integrity: If a student is found in violation of the standard of academic integrity given below, it is at my discretion to give the student a failing grade for the assignment and for the course. Please do not cheat.

The Standard of Academic Integrity

A fundamental principle for any educational institution, academic integrity is highly valued and seriously regarded at The University of Texas at Austin, as emphasized in the standards of conduct. More specifically, you and other students are expected to “maintain absolute integrity and a high standard of individual honor in scholastic work” undertaken at the University (Sec. 11-801, Institutional Rules on Student Services and Activities). This is a very basic expectation that is further reinforced by the University’s Honor Code.¹ At a minimum, you should complete any assignments, exams, and other scholastic endeavors with the utmost honesty, which requires you to:

- acknowledge the contributions of other sources to your scholastic efforts;
- complete your assignments independently unless expressly authorized to seek or obtain assistance in preparing them;
- follow instructions for assignments and exams, and observe the standards of your academic discipline; and
- avoid engaging in any form of academic dishonesty on behalf of yourself or another student.

For the official policies on academic integrity and scholastic dishonesty, please refer to Chapter 11 of the Institutional Rules on Student Services and Activities.

This does **NOT** mean that you should avoid working on homeworks with others in the class. Collaborative learning is often very effective. But it does mean that you should not just copy the work of others and hand it in as your own. You must know the material yourself. This **does** mean that all work on exams must be yours and yours alone.

¹The core values of the University of Texas at Austin are learning, discovery, freedom, leadership, individual opportunity, and responsibility. Each member of the University is expected to uphold these values through integrity, honesty, trust, fairness, and respect toward peers and community.

Schedule: A rough intended schedule is given below. If needed, I will adjust it.

Overview and Tools

Wednesday January 17-Monday February 5.

Topics. Resources and the environment in economics. Descriptive and prescriptive analyses. Unconstrained maximization and minimization. Constrained maximization and minimization. Optimization in parametrized problems and comparative statics. Uncertainty and the value of information. Introductory discounting.

Readings. The notes for Homework 1.

Ch. 1, 2, 18 in

Kolstad. *Environmental Economics, 2nd ed.* OUP.

A. Sandmo. The early history of environmental economics. *Review of Environmental Economics and Policy*, 9(2):1–21, 2015.

Applications of the Equi-marginal Principle

Wednesday February 7 – Monday February 26.

Topics: social choice; markets and productive efficiency; markets and allocational efficiency; market failures including public goods/bads, externalities, the commons.

Readings. Ch. 3, 4, 5, 6 in

Kolstad. *Environmental Economics, 2nd ed.* OUP.

E. Ostrom, J. Burger, C. B. Field, R. B. Norgaard, and D. Policansky. Revisiting the commons: local lessons, global challenges. *Science*, 284(5412):278–282, 1999.

Sections A, B, E in

OMB. *2015 Report to Congress on the Benefits and Costs of Federal Regulations and Agency Compliance with the Unfunded Mandates Reform Act.* Executive Office of the President of the United States, 2015.

Optional reading.

D. Fullerton. Six distributional effects of environmental policy. *Risk analysis*, 31(6):923–929, 2011.

U. LeGuin. The ones who walked away from Omelas. *The Winds Twelve Quarters. Short Stories*, 1987.

Estimating the Demand for Non-Marketed Goods

Wednesday February 28 - Monday March 19.

Topics: project evaluation and benefit-cost analyses; regulatory design; valuing non-marketed environmental goods; hedonic pricing.

Readings. Ch. 6, 7, 8 in

Kolstad. *Environmental Economics, 2nd ed.* OUP.

J. K. Hammitt. Saving lives: Benefit-cost analysis and distribution. *U. Pa. L. Rev. PENNumbra*, 157:189, 2008.

- T. Gayer and R. W. Hahn. Designing environmental policy: lessons from the regulation of mercury emissions. *Journal of Regulatory Economics*, 30(3):291–315, 2006.
- P. R. Portney. Trouble in Happyville. *Journal of Policy Analysis and Management*, 11(1):131–132, 1992.
- R. Costanza, R. D’Arge, R. De Groot, S. Farber, M. Grasso, B. Hannon, K. Limburg, S. Naeem, V. O’Neill, Robert, J. Paruelo, R. G. Raskin, P. Sutton, and D. B. Van. The value of the world’s ecosystem services and natural capital. *Nature*, 387(6630):253–260, 1997.

Regulating Firm and Individual Behavior

Wednesday March 21 - Monday April 9.

Topics: property rights; emission prices/fees; enforcement; audits; moral hazard.

Readings. Ch. 11, 12, 13, 15 and 16 in

Kolstad. *Environmental Economics, 2nd ed.* OUP.

W. B. Gray and J. P. Shimshack. The effectiveness of environmental monitoring and enforcement: A review of the empirical evidence. *Review of Environmental Economics and Policy*, 5(1):3–24, 2011.

Uncertainty and Dynamics

Wednesday April 11 - Monday April 30.

Topics: discounting for time and for uncertainty; dynamic optimization and discounting; jurisdictional competition.

Readings. The notes for Homework 5.

Ch. 18 and 19 in

Kolstad. *Environmental Economics, 2nd ed.* OUP.

Ch. 5 in

N. Stern. *Why are we waiting? The logic, urgency, and promise of tackling climate change.* MIT Press, 2015.