

Syllabus of Economics 436

Environmental Economics

Autumn 2007

Hendrik Wolff

Prerequisite: ECON 300.

Maximum class size: 38

Course goals and course description: This course aims at equipping students with economic methods and tools to analyze basic environmental issues. This course combines theoretical analysis with discussions on specific environmental policies as applied to water, air pollution, energy, climate change and human health issues. Within these examples, particular topics that will be covered are the microeconomic analysis of environmental regulation, the problem of social cost, policy instrument choice, enforcement of regulations, and estimating benefits of environmental improvements.

Class Sessions

There will be two meetings per week, each lasting one hour and fifty minutes, Tuesdays and Thursdays from 3:30 to 5:20 in Denny Hall, room number 212. Each class session will involve a lecture and a discussion section. In class, either at the very beginning or at the end of the class from time to time you will be writing so called “2 minute papers” as well as on an ad hoc basis in-class quizzes. Some additional lecture notes, problem sets, links to articles will be posted on the teaching website

<http://www.econ.washington.edu/instruction/courses/classpage.asp?class=2836> .

Students are expected to do the suggested readings before the class. Since part of the exams, the 2-minute papers and the in class quizzes are all “open book”, it is suggested that you bring the respective reading material to class. Active participation in the class is strongly encouraged.

Office Hours:

My weekly office hours are Wednesdays 2:45pm to 5:00pm. If this time window systematically conflicts with your time schedule, please let me know in class, so that we can find a different time. Also, feel free to email me at hgwolff@u.washington.edu for any research or course related questions. Please note, however, that emails with questions regarding course material *shortly* before problem set due dates or exams will of course not be answered.

Short Student Paper

Students are required to write a short, **less** than 2 page paper, on a specific environmental issue of their choice. The basis, however, for the paper should come from a recent article in a major newspaper/magazine, such as the *New York Times* or the *Wall Street Journal* that discusses an environmental issue. The student paper should then shortly elaborate on the following four points

- (i) what is the issue
- (ii) why is it important

(iii) how economic tools can be applied to analyze the issue, including references to the existing academic literature that discusses this subject.

(iv) what lessons can we learn from the economics analysis (i.e. what are the policy recommendations or what are the new insights for the business world etc.).

In class we will go over specific examples that exemplify this student paper project in more detail.

Please note: Handwritten papers will NOT be accepted, unless your handwriting looks as neatly as the printing from a typewriter. The main text should be double-spaced. Do not use a font smaller than 11 pt or larger than 12 pt.

The following deadlines apply to this short student paper:

- (a) November 1, 2007: Choice of newspaper article (on which the short paper is based on)
- (b) November 15, 2007: One sentence blurb on each of the above mentioned four points (i) to (iv) & at least one reference to an academic journal article that discusses this issue.
- (c) December 14, 2007: Submission of the final paper.

Problem Sets:

- (a) During the quarter you will go over several problem sets which will require you to apply the topics we discuss in class and in the readings. In order to solve the problem sets some amount of math (calculus and a limited amount of statistics) is required.
- (b) You are encouraged that you work in small groups of 2 to 4 people together on the problem sets. You are required, however, to write your solutions individually. Still, you should write all the names of those students that participated in your study/problem set working group on each of the problem sets.
- (c) Grading of the problem sets: The total number of problems sets is not fixed yet. Let's say, we have in total M problem sets. For your final grade $M-1$ problem sets will be taken into account only. The problem set that will be dropped from the evaluation is your problem set that received the least points during the quarter. So your study group can screw up once without regret.
- (d) Please write legibly or better, use a computer. If you wish, to save time, you can hand-in handwritten all (a) figures, (b) graphs and (c) messy mathematical equations, as these may take a lot of time to design/write with the computer.

Exams:

There will two 110 minute exams. They are tentatively scheduled for:

(a) **Midterm:** Tuesday, October 30, 2007, 3:30pm-5:20pm.

(b) **Final Exam:** Thursday, December 6, 2007, 3:30pm-5:20pm.

A good portion (not all) of these exams will be "open book". Hence feel free to bring any material that we have used during the quarter that you think could help you.

Assessment & Evaluation

Class Participation (including 2 minute papers, in class quizzes): 15%

Short Student Paper: 15%

Problem Sets 20%

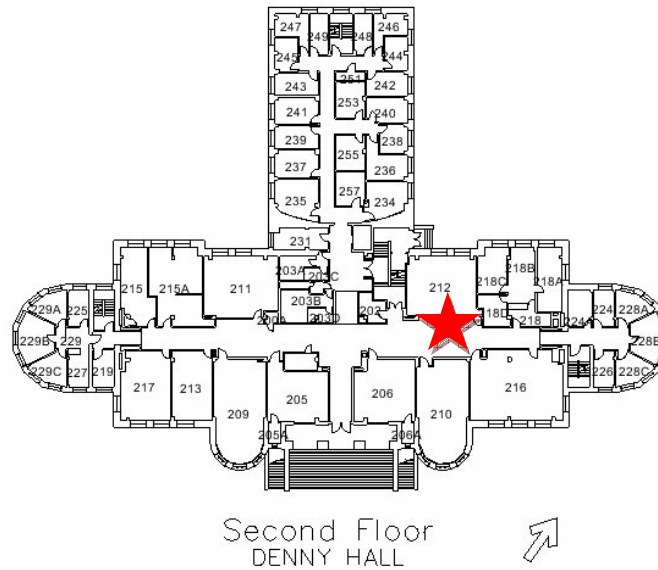
Midterm Test 25%

Final Exam 25%

Location

The location of Denny Hall can be viewed here:

<http://www.washington.edu/home/maps/northcentral.html?76,66,639,267> and the location of the class room within Denny Hall is provided in the figure below.



Course outline

The tentative outline of the course is as follows:

Introduction:

What is “Environmental Economics”?

Why is it important?

A first simple model on the “Economy and the Environment”

Sources of Market Failure,

Incomplete Markets, Externalities, Non-Exclusion & the Commons, Non-rivalry & Public Goods, Non-Convexities, Asymmetric Information

Pollution Damages and Economic Instruments

Criteria for Evaluating Environmental Policies

Decentralized Policies (Liability Laws, Property Rights, Voluntary Action)

Command & Control Strategies

Incentive Based Strategies

Evidence on Economic Instruments

Water Pollution

Energy Use

Air Pollution

Climate Change

Controversies in Public Policy Design and other “Hot Topics”

Profits vs. Environment

Environmental Justice

The Economic Development and the Environment

The Economics of Climate Change

Ethics

International Environmental Agreements

Reading and Textbooks

Much of the reading will consist of journal articles, that summarize key advances in the theoretical literature or provide recent empirical examples of evaluating environmental policies. The journal articles will be either posted on the teaching website or (if there are copyright issues), provided in the Odegaard library on reserve.

As textbooks for this course I'd like to recommend

Charles Kolstad: “Environmental Economics”, Oxford University Press, 2000.

Also, I will draw some of the material from:

Nick Hanley, Jason F. Shogren and Ben White: “Environmental Economics, In Theory and Practice”, 1997

as well as from

Barry C. Field and Martha K. Field: Environmental Economics, An Introduction. Fourth Edition, McGraw-Hill Irwin.

These books will be provided in the Odegaard library. If you would like to purchase one or two textbooks, then I recommend the book by Charles Kolstads and the textbook by Field & Field, whereby the first is more formal than the latter and would prepare you well for mastering the mathematical part of environmental economics (which may serve better for solving certain problem sets) and the latter book (by Field and Field) is less technical but more intuitive and still provides a very good overall understanding of the material.