

Economics 372
Mark Witte

Environmental Economics
Department of Economics

Northwestern University
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Contact Info: mwitte@northwestern.edu, Office: 3393 Kellogg Global Hub; phone (847) 491-8481

Class meets: Tuesday, Thursday, 12:30-2:00 in Tech LR4.

Office Hours: Tuesdays & Thursdays 2:00-3:30, Wednesdays 1:30-3:30 in 3393 Kellogg Global Hub, and also at other times by appointment. TA Jiachen Ma, Mondays 3:00-4:00 in room 3411.

Readings: Web notes: <https://sites.google.com/site/markwitteeconomics/>

Nathaniel Keohane and Sheila Olmstead (KO), *Markets and the Environment*, 2nd Edition, Island Press (2016) **NOTE: This book is available on Canvas under files.**

William Nordhaus (N), *The Climate Casino*, any edition, Yale University Press

DO NOT TAKE THIS CLASS IF YOU'VE HAD ECON 370 Environmental & Natural Resource Economics

Class Date	Lecture Topics	Partial list of readings
Tues. Jan. 9	Introduction, History, Micro	KO 1, N 1, Fullerton & Stavins
Thurs. Jan. 11	Economic Analysis of Externalities	KO 2, N 3. Krugman " Green Econ "
Tues. Jan. 16	Public Goods, Tragedy of the Commons, EKC	KO 5, Hardin
Thurs. Jan. 18	Measuring Costs & Benefits	KO 3, Kling et al. , Carson ,
Tues. Jan. 23	More measurement: Travel, Value of a Statistical Life, Defensive Spending, Rents, Wages, Regret	Hausman , Greenstone , Taylor , N 12, 18
Thurs. Jan. 25	Discounting the Future	KO 2 pp. 31-34, N 16, Giglio et al. , Newell & Siikamäki
Tues. Jan. 30	Markets: Efficiency versus Failure	KO 4, Kiesling , Shapiro & Walker
Thurs. Feb. 1	Market Based Economic Policy	KO 8 pp. 139-158, 160-167 Coase , N 19
Tues. Feb. 6	Results of Market Based Environmental Policy	KO 9 pp. 168-184, 185, 190-198
Thurs. Feb. 8	Midterm - 35% of class grade (Coverage up to Feb. 1 st)	
Tues. Feb. 13	Climate	N 4,5, Schelling , Landsburg and Romm , Krugman " Climate Casino "
Thurs. Feb. 15	Climate Policy	KO 10 pp. 200-207, 208-210, 217-220, 223-224. N 20 Drop Deadline Friday
Tues. Feb. 20	International Climate Agreements	N 21, Schelling Tip , Nordhaus Climate Club
Thurs. Feb. 22	Technology & Energy	N 13, 14, 23, Puffert , Roberts 2 , Roberts 3 , Rosling
Tues. Feb. 27	Energy	N 6, 9, 10, Harstad
Thurs. March 1	Climate Regulation	N 15, 17, Lomborg
Tues. March 6	Risks and Tails, Insurance	N 22, 24, 25, Wagner & Weitzman , Ruggeri , Bakkensen & Barrage
Thurs. March 8	Conclusion	KO 12, N 26.
Mon. March 19	CUMULATIVE FINAL EXAM - 3:00-5:00 PM	Tech LR4

Learning Objectives: This course should give you frameworks for understanding the efficiency issues that result from the interaction of economic forces and the natural world. Why do problems result, what can we know about them, what might we be able to do about them?

Grading	Share of Class Grade
Midterm	35%
Final Exam	50%
Crowdmark Homework	15%

The following are questions that many of you will have about the class.

Q: I am not now nor have I ever taken the prerequisites. Am I in trouble in here?

A: Probably, this class uses the tools of Econ 310-1 Intermediate Microeconomics I a lot, 281 Econometrics and 310-2 Intermediate Microeconomics II some as well.

Q: What's the deal with the readings?

A: Keohane and Olmstead's book is good (and available through Canvas), but covers some natural resources material that we leave for Econ 373 (such as anything to do with fishing, forestry, or sustainability). Nordhaus will get the Nobel Prize if one is given for climate economics (probably shared with Martin Weitzman). The other readings add depth and I will likely add a few articles as the quarter progresses. Most of the readings can be accessed through the online version of this syllabus and the [readings area on the class Google Sites page](#).

Q: What is the deal with these "Crowdmark Homeworks?"

A: There will be a bunch of these over the course of the quarter and they will usually follow what we did in lecture, and have some predictive value for what will be on the exams. Your first Crowdmark Homework will be to post an interesting article relating to environmental and natural resource economics in Piazza (in Canvas). At least two of the of the assignments will use **econometric tools**.

Q: What are the basic work expectations for the class?

A: I hope that you will do about two hours of study for every hour of lecture, and that you will get read the material assigned for the lecture before class (and catch up on the first lecture assigned reading too).

Q: What is your electronics communication policy?

A: **(1)** I expect you to have your preferred e-mail address entered into Canvas so that I can send messages to the class, and I expect you to check that e-mail on a daily basis. **(2)** Use Canvas's **Piazza** discussion forum (found in Canvas's "Modules") to post questions that would be of general use to your classmates. (Yes: "What does MR stand for?" No: "I got 11 points on the midterm; does that mean I'm going to flunk the class?") **(3)** Silence your cellphone for the duration of the class and put it away where you won't be tempted to look at it. [Piazza is a discussion forum that allows anonymous posts. The story about its creation is pretty cool.]

Q: Is it OK if I surf the web and watch crazy videos whenever your lectures get too boring?

A: Sorry, no. Put your phones away and no computers or tablets during lecture; take notes on paper. (I understand that some of you like to take notes on your computer. However, I take a pretty decent salary with the expectation that in return I am to teach you economics. So, the temptation to look at distractions online during class is [likely to diminish your learning in lecture](#), and worse still, people who are web surfing distract the people around them, creating a negative externality.) If this creates a great hardship for you, please come talk to me about it.

Q: What happens if I fall suddenly ill and am unable to make it to a test?

A: If you do not reach me or leave a message on my e-mail (mwitte@northwestern.edu), your misfortune will be doubled. You will get a zero on the test for a grade of F that cannot be made up. Any problem that causes you to be physically unable to take a test must be carefully documented by an independent source who can confirm that you were incapacitated.

Q: Can I expect any leniency if I'm caught cheating or engaging in any unethical behavior?

A: No. Weinberg's policy is that students who are suspected of cheating are reported *immediately*. In recent years, I've sent the names of students to the dean; some were expelled and those who were not did not enjoy the experience.

Q: The lecture is running a few minutes over, what should I do?

A: Stay put and observe a rare occurrence.

Q: In studying for the tests, should I stress studying the notes, the book, or the readings?

A: All of the above, but particularly the notes. I'll make sure that I don't inflict any math problems on the exams that I haven't already given you in the homework. Note however, that not everything that is important for the class, or that I cover in lecture or the readings will make it onto the test. Some material is important for you to learn, but does not lend itself to good test questions. I'm also inclined to have you do math on homework to build that level of understanding there, and then use graphs on exam questions so as to minimize the chance of algebra mistakes causing you to miss points on something where you had a good level of understanding.

Q: I can see that half of the people in this class are smarter and harder working than I am and the other half of the students are dumber and lazier than I am. What grade will I get in here?

A: B-. You are the median or middle student. Half the class will get grades of B- or better and the other half will get grades of B- or worse. However, this doesn't hold exactly in a small class. In smaller classes, I usually end up grading by the method of "significant differences." I compute weighted points for everyone in the class. Some of you will do really well, then there will be a bit of a gap in the scores, then there will be another bunch, and then a gap in the scores, then another bunch, then a gap, etc. The top bunch will be the A's, the next bunch the B's, etc., with the minus/plus grades falling in between. The grades on the midterms give guidance toward where you are likely to be in this distribution (where midterm points matter, but grade breaks don't). The points from the homeworks and quizzes move you up or down in that distribution.

Q: Averaging my grades, I come out very close to a higher grade. How about if you give it to me?

A: No...unless you are deserving of special consideration.

Q: Am I deserving of special consideration?

A: That depends. I may feel you deserve a higher grade than you earn on the tests if I feel that your comments in class, Piazza, and office hours improve the education of your fellow students and show you are able to and have been thinking intelligently about the material.

Q: What will the tests be like?

A: Some problem solving, some graphing, some essays. On the homeworks I'll give you examples of the sorts of problems I am apt to ask. Also, you are expected to *go to the bathroom before the exam and then hold it until the exam is over*. Interesting fact: On the tests, *we will give you points for leaving a questions blank*. On any given problem or graded sub-problem, we will give you 20% of the points if you leave the question completely blank. This is intended to remove the incentive to pursue "pity points" on questions where you really don't know what I'm asking, and instead allow you to devote your time to doing the best you can on the material you know best. Of course...you'll probably just choose to write complete and perfect answers to every question on every test, but we wanted you to have the option.

Q: What are the math requirements for this class?

A: You will need to be able to do really simple calculus, graphing, and algebra. I'll expect you to be able to use basic economic tools like present values, expected values, noncompetitive market structures, hypothesis testing, and regression analysis. I will do some more complicated math for the purposes of exposition but I will not ask you reproduce it on the exams although you should understand the underlying ideas. As a guide, I will try to preview any math or exposition you might need in the homework.

Q: When the class is over, what will I wish that I had known at its start?

A: Beyond the obvious things, in the past some students wrote on their course evaluation forms that they wish they had known my tests would be so hard. I agree that my tests tend to be a bit long and I try to make them hard. Also, I'll admit there's some reading so be careful not to fall too far behind. Now you've been warned.

Q: What is the most important thing?

A: Most importantly, please be assured that I want students to learn and to receive the good grades they deserve. So please make an appointment with me should you have undue difficulty with your work in the course.

Any student with a documented disability needing accommodations is requested to speak directly to the [Accessible NU](#) (847-467-5530) and the instructor, as early as possible in the quarter (preferably within the first two weeks of class). All discussions will remain confidential.