

Contact Info: mwitte@northwestern.edu

Class meets: Tues. & Thurs. 11:00-12:20 PM at 2122 Sheridan Rd Classroom 250 (We will try to record these.)

Office Hours: Mondays 1:30-3:00 and Wednesdays 3:00-4:00 in Kellogg 3393. I will also be available at those times over Zoom. Other times can work too. Ask!

TA: Sarah Bui (sarahbui@u.northwestern.edu) will occasionally have a section on Fridays from 11-11:50 in University 102. OH: Friday 12:00 - 2:00 in Kellogg 3198.

Readings/Notes: <https://sites.google.com/site/markwitteeconomics/home/economics-372-environmental-economics>

The KO readings and underlined links are the required materials for the week.

Week of January 7 - Introduction
Keohane-Olmstead (KO) 1, 2, Fullerton & Stavins , Krugman , Human Capital , Chang et al , Recessions are good? , Trolley 1 , Trolley 2 , Trolley 3 , Trolley 4 , Trolley 5 , Philosophy ,
Week of January 14 - Externalities, Public Goods, Measuring Social Costs & Benefits
KO 3, Air pollution , Kling et al , Carson , Taylor on CV , Hausman , Landsburg VSL , Taylor VSL , Sunstein , Taylor on Risk , Death risks , Bakkensen & Barrage , Sunset , Terrorism ,
Week of January 21 - Tragedy of the Commons, Discount Rates
KO pp. 31-34, 59-60, KO 5, Hardin , Landsburg vs Romm , Giglio et al. , Newell & Siikamäki , Electric cars , Climate Finance , Racial Gap , Environmental Justice .
Week of January 28 - Market-Based Policies versus Command & Control
KO 4, KO 8 pp. 139-158, 160-167, KO 9 pp. 168-184, 185, 190-198, Command & Control , Kiesling , Levinson , Coase , Carbon Markets 101 , Permits , Tradeable Allowances , India Cap & Trade , S-Head ,
Week of February 4 - Environmental Policies
Roberts 1 , Greenstone , Offsets 1 , Offsets 2 , Offsets 3 , Offsets 4 , Offsets 5 , John Oliver , Borenstein , Jacobsen et al. , Disasters
Tuesday, February 11 - Review.
Thurs. February - Midterm - 11:00-12:20 AM IN CLASS (Friday, February 14 is the Drop Deadline)
Week of February 18 - Climate
KO 10 pp.200-210, 217-220, 223-224. Vocab , Hsiang & Kopp , SCC1 , SCC2 , Stern & Stiglitz , Science Friday , CO2 Pricing , Who prices carbon? , Nordhaus , Lomborg , Schelling , Wagner & Weitzman , xkcd , xkcd 2 ,
Week of February 25 - Energy (Friday, February 23 is the P/N Deadline)
Roberts 2 , Roberts 3 , State Electricity , Energy Flow Charts Sankeys 1 , Sankeys 2 , Weekly Electricity , Renewable Energy Types , Energy Sources , Washing Machines , Negative prices? , Storage , Cheap Solar , Solar Plants , Hausman & Kellogg (Long. Understand the story and Figures 4, 5, 6)
Week of March 4 - Technology, International Agreements
KO 12, Rosling , Schelling Tip , Rajan , Acemoglu , Harstad , Rich , Agnotology . Blanchard et al , Sharks , Harford ,
Wednesday, March 19 - Final Exam - 9:00-11:00 AM IN CLASS

Exam 1	35% of class grade	Thursday, February 11, 11-12:20 in the classroom
Drop Deadline		Friday, February 14
P/N Deadline		Friday, February 28
Withdrawal deadline (W)		
Final Exam	45% of class grade	Wednesday, March 19, 9-11 in the classroom
Homework	20% of class grade	Various dates

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

Q: Where should I look for recorded lecture videos, slides, readings, and things like that?

A: Lecture videos will be under Panopto on Canvas. Readings on the syllabus (and links). Lecture slides here:

<https://sites.google.com/site/markwitteeconomics/home/economics-372-environmental-economics/econ-372-lecture-notes>

(I will record some extra video lecture material and post it on Panopto if I run short of time or if there are topics that fit nicely into short recordings. Like insurance markets!)

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 310-1,2 Intermediate Microeconomics a lot, and Econ 281 Introduction to Econometrics a fair bit as well.

Q: What are the math requirements for this class?

A: You will need to be able to do basic calculus, graphing, and algebra. I expect you to be able to use basic economic tools like present values, expected values, non-competitive market structures, and to understand regression analysis. I will do some more complicated math for the purposes of exposition but I will not ask you to 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: How does the homework work?

A: We will post questions and you will submit answers through Canvas. The computational problems will be graded by Canvas, and you will get three chances to get them right. You can collaborate with your peers on these and ask us questions through Canvas's *Discussions* (anonymously if you wish). Some of the homework will involve you submitting hand-drawn graphs or written summaries of the lecture or reading contents.

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 read the material assigned for the lecture before class (and catch up on the first lecture assigned reading too).

Q: What is the deal with these 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. When you are posting about specific homework or exam questions, it's very helpful if you **cut-and-paste** the actual text question into what you write.

Q: What is the First Homework?

A: Your first Canvas Homework is to go onto the Canvas discussion forum and post the name of the

greatest recording artist of our era. Then post it again as the answer to the Canvas homework question. (See...you're getting practice with the discussion forum and the Canvas homework system!)

Q: What will the tests be like?

A: Some problem solving, some graphing, some essays. The homeworks will 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 question blank*. On any given problem or graded sub-problem, we will give you 20% of the points if you leave the question completely blank (or clearly cross out what you've written). 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: 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 did not enjoy the experience.

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 the 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. Finally, I have posted some old exams on Canvas.

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, discussion posts on Canvas, 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 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 (mwitt@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. A missed midterm will have its weight put on the next exam.

Q: Will this class be recorded?

A: I hope to record all of the lectures. "Portions of this class will be recorded by the instructor for educational purposes. These recordings will be shared only with students enrolled in the course and will be deleted at the end of the Quarter." You are not allowed to make recordings of the class. For more information about this, look here: <https://www.registrar.northwestern.edu/faculty-staff/syllabi.html>

Q: What is your electronics communication policy?

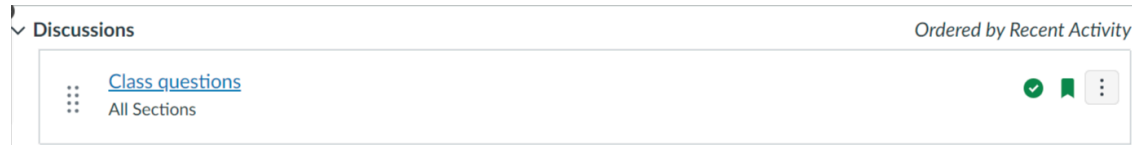
(1) I expect you to have your preferred e-mail address entered into Canvas so that I can send messages to

the class, and I expect you to check that e-mail on a daily basis.

(2) Use Canvas *Discussions* to post questions that would be of general use to your classmates. (Yes: “What does GDP stand for?” No: “I got 11 points on the midterm; does that mean I’m going to flunk the class?”) When you post about specific homework or exam questions, it’s very helpful if you would cut-and-paste the actual question into what you write.

(3) Silence your cell phone for the duration of the class and put it away where you won’t be tempted to look at it. However, if you’re feeling really on top of the material, you can signal me that you want me to ask you a question by messing with your phone during the lecture.

(4) Subscribe to Canvas *Discussions* (the little green banner thingy).



(5) At some point this term, answer a question posted by one of your classmates on Canvas *Discussions*. (Can you coordinate with a classmate to set this up? I don’t see why not. This will be Homework 1.)

Q: What if I have concerns about accessibility for this class?

A: Any student with a documented disability needing accommodations is requested to set these up with AccessibleNU (accessiblenu@northwestern.edu, 847-467-5530) as early as possible in the quarter (preferably within the first two weeks of class). All discussions will remain confidential. For resources on safety and mental and physical health, please visit the [NUhelp](#) website or phone app.

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 CTECs that they wished 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: Anything else?

A: Yes. “Please note that the specifics of this course syllabus are subject to change in the case of unforeseen circumstances. Instructors will notify students of any changes as soon as possible. Students will be responsible for abiding by the changes.” Northwestern has expectations for all students outlined here: <https://www.registrar.northwestern.edu/faculty-staff/syllabi.html>

Q: What is the most important thing?

A: 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.