**Instructor:** Prof. Kevin Roth
Department of Ag and Applied Economics
317 Taylor Hall
E-mail: XXXXXXXXXXXXXX Note that I do not answer content questions over email, only logistical questions.
(content: "How do I solve problem 3?" logistical: dates, locations, exams times etc.)
**Office Hours:** M 2:00-2:30, M 3:45-4:30 & W 2:00-2:30

**TA:** Soong Kit Wong
E-mail: swong26@wisc.edu
**Office Hours:**

**Grading:** Your final grade will be based on the following components and weights.

| | |
|---|---|
| Homework: | 40% |
| Midterm 1: | 15% |
| Midterm 2: | 15% |
| Final Exam: | 30% |

**Schedule:** Part 1: Course basics, Open Access Resources, Public Goods, Biodiversity
**Midterm 1: February 28**

Part 2: Water, Local Pollution, MCB-MCR framework
**Midterm 2: April 4**

Part 3: Valuation, Climate Change

**Comprehensive Final Exam: May 12, 2022, 10:05 – 12:05 pm**

**McBurney Disability Students:** please check in with me before the first exam if you need extra time or a smaller setting.

Please check to make sure these dates work for you and inform me immediately if there are serious conflicts. I will generally only accommodate make up exams under extraordinary circumstances. Booked flights home before summer break are not a valid excuse for a make-up exam.

**COVID policy / Some warnings on who should <u>not</u> take this class**

You need to be at the final. There is no make-up or alternative

There are no make-ups for midterms.

You must wear a mask in lecture and office hours. This holds even if Dane county and the university change their policy. Sorry I have two unvaccinated children at home and if you give me covid I cannot send them to childcare for 2+ weeks.

If I need to quarantine, in-person class will be canceled via email and lectures will be recorded and posted.

**Homework:** There are 10 homework assignments (40% of final grade)

You will have one week to do an assignment.

Typically, you will get one assignment a week. Although before exams, there will sometimes be two assignments out at once. This happens so that the due date allows me to post a solution key to allow you to study.

Please see the schedule below for when things are assigned and due.

I will post a word document version of the homework for you to work on offline. You can turn that assignment in as a paper copy or electronically. Electronically it can be in word or as a scanned document. I will accept a high-quality photo but please try to avoid this unless absolutely necessary.

Homework is due at the start of lecture on the day it is due. Electronic submission must be timestamped for the start of lecture, not during or before.

**Readings:** Testable material comes from the lecture and homework.

The book, discussion section, any "additional help" videos listed etc. are supplemental. If a topic only shows up in those sources, I do not assume you have seen it. The book is really meant for those who benefit from that format.

Book: Harris, J.M., & Roach, B. (2021). Environmental and Natural Resource Economics: A Contemporary Approach (5th ed.). Routledge. https://doi.org/10.4324/9781003080640

I try to give the relevant sections based on the 4th and 5th editions of the book with the 3rd edition in parentheses when it differs. Please contact me if you think the wrong section is referenced. I do this so you can buy whatever version of the textbook is cheapest. Feel free to us an alternative textbook if it gets you what you need. Or not textbook at all.

**Exams:** Exams are in class. If COVID requires the course to move online, assume that the test will be during class time but via the web in some form. Make sure you have internet lined up.

I do not do study guides although I usually do a short review discussing what I expect you to know and not know. I'm also very happy to answer questions.

Exams tend to be hard and curved up as needed at the end of the course.

I do not allow make-up exams or early finals for any reason other than medical emergencies. If you cannot make a midterm for any reason other than a medical issue, your grade for that exam will be redistributed towards the remaining exams. So if you

cannot make the first midterm because you need to go to an athletic event, those points will be redistributed towards the second midterm and final.

Medical emergencies, including COVID will be dealt with on a case-by-case basis but require proof.

# Section 1: Course basics, Open Access Resources, Public Goods, Biodiversity

| | Date | Lecture Topic | Homework | | Optional Reading |
|---|---|---|---|---|---|
| | | | Assigned | Turn in | |
| Week 1 | | | | | Harris and Roach Ch. 3, including Ap |
| | 26-Jan | Intro | | | |
| Week 2 | 31-Jan | Supply Demand and Welfare | 1 | | |
| | 2-Feb | Externality/ Pigou / Coase | | | |
| Week 3 | 7-Feb | Open Access Resources | 2 | 1 | Harris and Roach Sections 4.1 and 17.1 to 17.3 ( |
| | 9-Feb | Solutions: ITQs and Property Rights | | | ed) |
| Week 4 | 14-Feb | Regression | 3 | 2 | |
| | 16-Feb | Public Goods / Solutions to Public Goods | 4 | | Harris and Roach Sections 4.2 |
| Week 5 | 21-Feb | Noah's Ark Problem / Biodiversity | | 3 | |
| | 23-Feb | Wind Erosion in the Dust Bowl (& review) | | 4 | |
| Week 6 | 28-Feb | Exam 1 | | | |
| | | | | | |

| | Date | Lecture Topic | Homework | | Optional Reading |
|---|---|---|---|---|---|
| | | | Assigned | Turn in | |
| Week 1 | | | | | Harris and Roach Ch. 3, including Ap |
| | 26-Jan | Intro | | | |
| Week 2 | 31-Jan | Supply Demand and Welfare | 1 | | |
| | 2-Feb | Externality/ Pigou / Coase | | | |
| Week 3 | 7-Feb | Open Access Resources | 2 | 1 | Harris and Roach Sections 4.1 and 17.1 to 17.3 (11. |
| | 9-Feb | Solutions: ITQs and Property Rights | | | |
| Week 4 | 14-Feb | Regression | 3 | 2 | |
| | 16-Feb | Public Goods / Solutions to Public Goods | 4 | | Harris and Roach Sections 4.2 |
| Week 5 | 21-Feb | Noah's Ark Problem / Biodiversity | | 3 | |
| | 23-Feb | Wind Erosion in the Dust Bowl (& review) | | 4 | |
| Week 6 | 28-Feb | Exam 1 | | | |
| | | | | | |

Additional (very optional) help with Supply and Demand basics

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|---|---|
| Decreasing marginal utility | https://www.youtube.com/watch?v=f7mTb3mOwyw |
| Increasing marginal cost | https://www.youtube.com/watch?v=fzgBWol_S4Q |
| Supply | https://www.youtube.com/watch?v=ZSvEfSvRIus |
| Demand | https://www.youtube.com/watch?v=v023I-Iq3HE |
| CS | https://www.youtube.com/watch?v=Q8u4xXMGQX0 |
| PS | https://www.youtube.com/watch?v=vVUKQAIZafM |
| External Costs | https://www.youtube.com/watch?v=CpVf11f09Pk |

## Section 2: Water, Local Pollution, MCB-MCR framework

| | Date | Lecture Topic | Homework | | Optional Reading |
|---|---|---|---|---|---|
| | | | Assigned | Turn in | |
| Week 6 | 2-Mar | Water | 5 | | Harris and Roach Chapter 20 (15 in 3 |
| Week 7 | 7-Mar | Local Pollution 1 | | | |
| | 9-Mar | Local Pollution | | 5 | |
| Week 8 | 14-Mar | Spring Break | | | |
| | 16-Mar | | | | |
| Week 9 | 21-Mar | MCB MCR framework | 6 | | Harris and Roach Chapter 8 but skip 8.4 (16 but s |
| | 23-Mar | MCB MCR framework | 7 | | |
| Week 10 | 28-Mar | Taxes and Cap and Trade | | 6 | |
| | 30-Mar | Second Best Policies | | 7 | |
| Week 11 | 4-Apr | Exam 2 | | | |
| | | | | | |

## Section 3: Valuation, Climate Change

| | Date | Lecture Topic | Homework | | Optional Reading |
|---|---|---|---|---|---|
| | | | Assigned | Turn in | |
| Week 11 | | | | | |
| | 6-Apr | Valuation 1 | 8 | | |
| Week 12 | 11-Apr | Valuation 2 | | | Harris and Roach Sections 6.1-6.4 and the V |
| | 13-Apr | Climate Change Overview | 9 | 8 | |
| Week 13 | 18-Apr | Cost of Carbon | | | Harris and Roach Chapter 12 (18 in 3rd ed) and 6.5 in 3rd ed) https://www.rff.org/publications/explainers/so https://www.rff.org/publications/explainers |
| | 20-Apr | Violence | | | |
| Week 14 | 25-Apr | First Best Carbon Instruments | 10 | 9 | https://www.rff.org/publications/explainers integrating-renewables/ |
| | 27-Apr | Sectoral Policy 1: Power and Transport | | | |
| Week 15 | 2-May | Sectoral Policy 2: Carbon Offsets | | 10 | |
| | 4-May | Innovation | | | |
| Final | 12-May | 10:05 AM; Cumulative | | | |

Additional (very optional) help with economic concepts

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|---|---|
| Discounting | https://www.youtube.com/watch?v=Mol1yT7tczY |
| Expected Value | https://www.youtube.com/watch?v=q-FAmfkOkYU |