

Environmental Economics

AAE / Econ / Envir. St. 343

Fall 2020

Instructor:

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Office Hours: **All office hours are online, in the AAE 343 course room in Canvas**

Provencher: Monday, 2-4
Sims: Thursday, 11-1
Vuong: Monday, 9-11

Course Description

The primary goal of this course is to introduce students to major concepts in the field of environmental economics. Given the diverse backgrounds of students with respect to previous coursework in economics, the approach taken in this course is to convey concepts using a mix of standard graphical exposition, case studies, classroom games, and short problem sets. The focus throughout the term is on real-world problems.

The course is organized around four major questions:

1. Why do environmental problems occur and how can we do better?
2. How much environmental damage should be allowed?
3. Are we running out of natural resources?
4. What is the role of economics in the major environmental issue of our time?

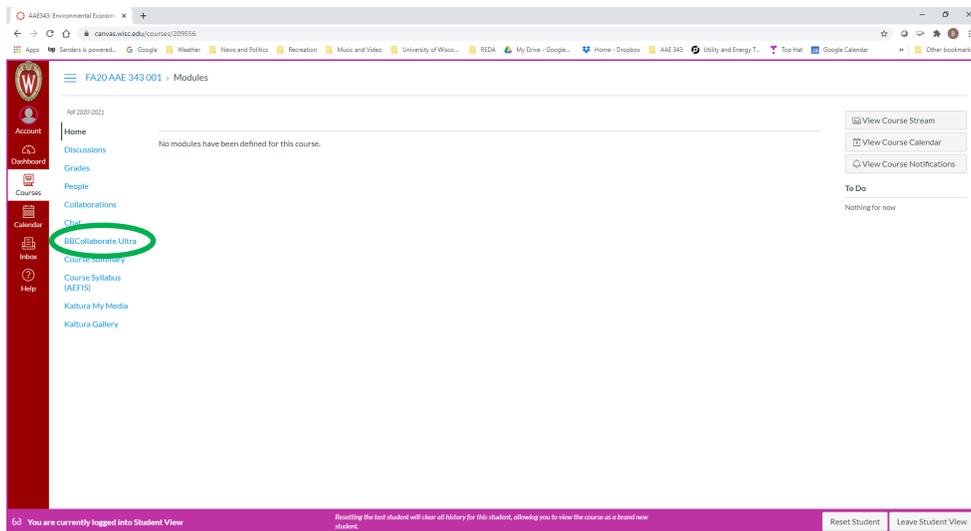
We will examine each of the first three major questions by developing a set of economic tools and then analyzing real-world cases related to each question. The fourth question applies these tools in an examination of climate change and energy policy.

Accessing lectures and discussion sections

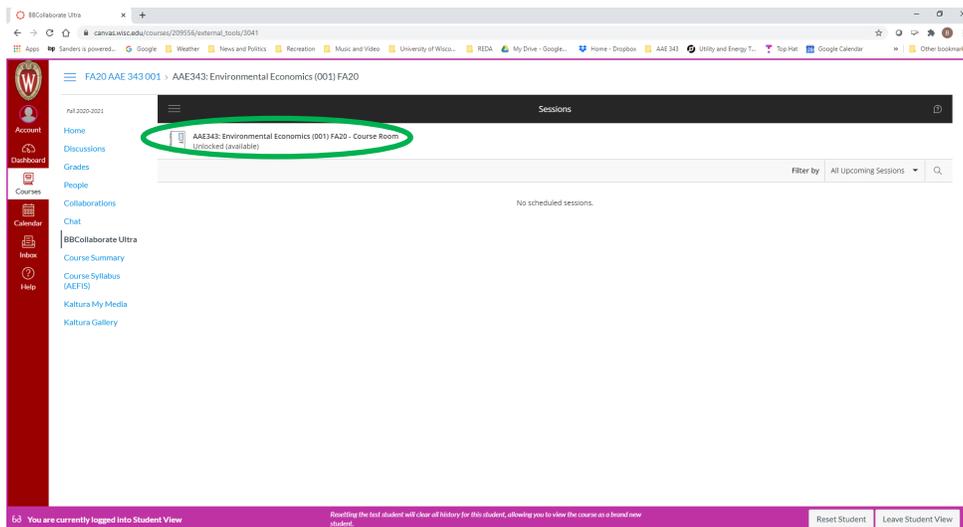
Discussion sections 309 and 310 are face-to-face in the rooms indicated in the fall timetable.

Lecture and discussion sections 311 and 312 will be presented remotely using BBCollaborate Ultra videoconferencing, available through the course Canvas page. We will use the “Course Room” in BBCollaborate, which is basically a videoconferencing location that is always accessible to students in the course. To get into the course room, do the following:

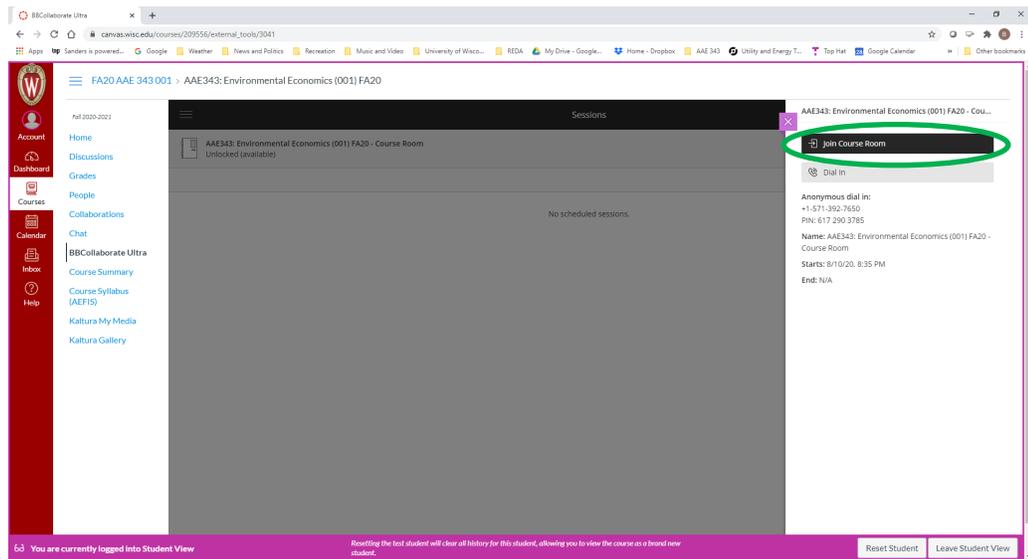
1. Go to the course Canvas page. On the menu in the left column (the one with light blue letters), click on “BBCollaborate Ultra”.



2. Click the link “AAE 343: Environmental Economics (001) FA20 – Course Room”.



3. A column will appear on the right-hand side of your screen. Click the link “Join Course Room”. This will take you into the videoconference “room”.



Readings:

The textbook for this class is **recommended**, not required.

Keohane, N.O. and S.M. Olmstead. 2016. *Markets and the Environment*. Island Press. Second Edition.

The textbook is available on-line at Amazon and directly from Island Press.

Course Material on Canvas

Course material such as the syllabus, lecture slides, homework assignments and solutions, discussion notes, and solutions to exams will be available on the course Canvas page.

Grading

The grading scheme is presented below. Because this is the first time I’m teaching this course remotely, **I may make some adjustments to the grading scheme in the first few weeks of the class, so consider this to be a preliminary syllabus.**

Grading is based on two in-class exams, lecture and discussion participation, and homework assignments. Exams will cover material presented in class, discussion, and homework assignments. The exams each count for 20% of your grade, the homework assignments count for 32%, and lecture and discussion participation counts for 28%. Additional information about your grade for participation and homework is provided below. In summary:

- 20 points for the first exam
- 20 points for the second exam
- 32 points for the problem sets (8 problem sets, 4 points each)
- 28 points for participation in lecture and discussion

100 points total

Targeted grade distribution:

$\geq 93\%$	A
$< 93\% \ \& \ \geq 88\%$	AB
$< 88\% \ \& \ \geq 83\%$	B
$< 83\% \ \& \ \geq 78\%$	BC
$< 78\% \ \& \ \geq 70\%$	C
$< 70\% \ \& \ \geq 60\%$	D
$< 59\%$	F

Depending on how the class is doing, I might curve grades up. I will not curve grades down.

Exams

Exams are in class. **Exam dates are October 22 and December 10.** I will provide details about how we will manage the logistics of the exams later in the semester.

The first exam covers the material presented in the first half of the course, and the second exam covers the material presented in the latter half of the course. The second exam is not cumulative, though of course concepts presented in the first half of the course will be relevant to the material in the second half of the course.

Top Hat student engagement platform

Participation credit will be based on your polling activity using Top Hat during lectures and discussion. This educational platform allows students to use their mobile devices (smartphones, laptops, iPads, etc.) to respond to questions I ask in lecture and the TAs ask in discussion. This requires you to create an account. Last I checked, the cost is \$16 for a semester, or \$20 for the year, and this subscription fee covers all UW courses that use Top Hat. For instructions on creating an account, go [here](#). Once you have an account, enroll in the UW course titled, “Environmental Economics Fall 2020”. **The join code is 912284.**

You will also need to enroll in your discussion section for the course. Here are the relevant join codes (please make sure you enroll in the proper discussion section):

- Section 309: **513542**
- Section 310: **433461**
- Section 311: **398469**
- Section 312: **662585**

To answer Top Hat questions in discussion, **you must attend the discussion section you are assigned to.**

Do not procrastinate on creating your Top Hat account and enrolling in the course and discussion section. We will test the Top Hat software in the first lecture. If you do not have an account by the second lecture (September 8), your participation grade will suffer because, as described below, responses to Top Hat polls are the basis for receiving participation credit in lecture and discussion.

Lecture and Discussion Participation

28% of your grade is based on active participation in the course. Course participation involves responding to questions in designated lectures and discussion sections using Top Hat.

Polling serves three basic purposes. The first is to break up the lecture a bit –75 minutes is a long time for a student to stay focused on class material –by having students participate in the lecture via their polling responses to questions raised in class. Questions will range from those querying your opinion about environmental or other matters (e.g. “Do you believe the U.S. should have pulled out of the Paris Climate Accord?”), to those specific to the material presented in the class (“Under this tax system, how many units of pollution will firm X emit?”).

Second, we will use polling in several economic games to illustrate certain economic principles.

Finally, polling gives us feedback on whether you understand the material we present. If I ask a question about the material and find out that a sizable proportion of the class do not give the correct response, then I have good reason to go back through the material, presenting it a little differently to facilitate your understanding.

Your participation grade is based on the proportion of Top Hat questions you answer, and, for those questions for which the grade includes a “correctness” grade, whether you get the question correct. Some lectures/discussions will have many questions, some might have only a single question. Your participation grade will depend on the total number of questions you answer (and get correct), not the proportion of lectures/discussions you attend. I expect that you will be asked at least 100 Top Hat questions during the semester (probably closer to 200).

For “graded” questions, ½ of the value of the question will be based on whether you responded at all, and ½ will be based on whether you got it correct. Graded questions will be noted in parentheses in the question, e.g., “Why is the sky blue? (graded)”.

It is your responsibility to make sure that your polling device is functioning properly. You will need to make sure your device has adequate power and that you have good internet connectivity. In the first lecture we will try several practice questions to check that you are able to access the course content and receive polling questions.

Problem Sets

Problem sets will focus on applying concepts from class to real-world environmental problems. There are 9 problem sets throughout the term. Your grade for the homework will be based on your best 8 homework scores, each worth 4 points, for a total of 32% of your grade. Homework assignments will be posted on the course website on the date indicated in the table below, and answers must be uploaded to the course Canvas page **as MS-Word or pdf files by the start of class (9:30 AM)** on the dates indicated in the table. Assignments turned in after 9:30 AM but before 6 PM on the due date will be penalized 10%. Assignments turned in between 6 PM and midnight on the due date will be penalized 20%. Assignments submitted after the due date will not be graded (a score of 0 for the assignment).

Posted	Due at 9:30 AM on the following day:	Returned (in discussion)
Sept 10	Sept 15	Sept 18
Sept 17	Sept 22	Sept 25

Sept 24	Sept 29	Oct 2
Oct 1	Oct 6	Oct 9
Oct 8	Oct 13	Oct 16
Oct 29	Nov 3	Nov 6
Nov 5	Nov 10	Nov 13
Nov 12	Nov 17	Nov 20
Nov 19	Nov 24	Dec 4

Policy concerning regrading

Homework assignments are not regraded except for arithmetic errors.

If you wish to have an exam regraded, you must provide a *written explanation of why you believe the scoring is incorrect*. The burden is on you to establish that the original scoring of your exam was unfair. I will not consider regrades without the attendant written request.

Copyright statement

Materials and recordings for AAE 343 are protected intellectual property at UW-Madison. Students in this course may use the materials and recordings **only** for their personal use related to participation in the course. Students may also take notes solely for their personal use. You are not permitted to post or sell any AAE 343 material. This includes posting recorded material on social media or to other internet sites. Unauthorized use of these copyrighted lecture materials and recordings constitutes copyright infringement and may be addressed under the university's policies, UWS Chapters 14 and 17, governing student academic and non-academic misconduct.

See information about [privacy of student records and the usage of audio-recorded lectures](#).

Academic integrity

By virtue of enrollment, each student agrees to uphold the high academic standards of the University of Wisconsin-Madison; academic misconduct is behavior that negatively impacts the integrity of the institution. Cheating, fabrication, plagiarism, unauthorized collaboration, and helping others commit these acts are examples of misconduct that may result in disciplinary action. Examples of disciplinary action include, but are not limited to, failure on the assignment/course, written reprimand, disciplinary probation, suspension, or expulsion.

Student responsibilities related to the pandemic

For face-to-face discussion sections (309 and 310): Individuals are expected to wear a face covering while inside any university building. Face coverings must be worn correctly (i.e., covering both your mouth and nose) in the building if you are attending class in person. Students who are unable to wear a face covering due to disabilities or medical conditions should contact the [McBurney Disability Resource Center](#). Students requesting an accommodation unrelated to disability or medical condition should contact the Dean of Students Office. Students attending f2f discussion sections are also expected to maintain standard social distance (at least 6 feet) from the instructor and fellow students.

Students who refuse to abide by these basic safety measures will be reported to the Office of Student Conduct and Community Standards and will not be allowed to return to the classroom until they

agree to comply. The instructor may cancel or suspend discussion if not all students are adhering to the safety measures.

Students should continually monitor themselves for COVID-19 symptoms and get tested for the virus if they have symptoms or have been in close contact with someone with COVID-19. Students are strongly encouraged to contact their instructors as soon as possible if they become ill or need to isolate or quarantine, in order to make alternate plans for how to proceed with the course.

Lecture Schedule (subject to minor adjustments)

Introduction and Review

Meeting #1 (9-3): Introduction and review of syllabus

Question #1: Why do environmental problems occur and how can we do better? Market failure and environmental policy.

Meeting #2 (9-8): Public goods and externalities I
Meeting #3 (9-10): Public goods and externalities II
Meeting #4 (9-15): Externalities and the Coase Theorem
Meeting #5 (9-17): Economics of pollution control I
Meeting #6 (9-22): Economics of pollution control II
Meeting #7 (9-24): Economics of pollution control III
Meeting #8 (9-29): Economics of pollution control IV

Question #2: How much environmental damage should be allowed? The economic costs and benefits of changes in environmental quality.

Meeting #9 (10-1): Cost-benefit analysis I
Meeting #10 (10-6): Cost-benefit analysis II
Meeting #11 (10-8): Economics of environmental valuation I
Meeting #12 (10-13): Economics of environmental valuation II
Meeting #13 (10-15): Economics of environmental valuation III
Meeting #14 (10-20): Economics of environmental valuation IV

*Meeting #15 (10-22): **First Exam***

Question #3: Are we running out of natural resources? The economics of resource use over time

Meeting #16 (10-27): Resource use over time I
Meeting #17 (10-29): Resource use over time II
Meeting #18 (11-3): Resource use over time III
Meeting #19 (11-5): Resource use over time IV
Meeting #20 (11-10): Resource use over time V
Meeting #21 (11-12): Resource use over time VI

Question #4: What is the role of economics in the major environmental issue of our time?

Meeting #22 (11-17): Economics of climate change and energy policy I
Meeting #23 (11-19): Economics of climate change and energy policy II
Meeting #24 (11-24): Economics of climate change and energy policy III
Meeting #25 (12-1): Economics of climate change and energy policy IV

Meeting #26 (12-3): Economics of climate change and energy policy V
Meeting #26 (12-8): Economics of climate change and energy policy VI

*Meeting #27: (12-10): **Second Exam***