Environmental and Resource Economics I  
ECO 9310  
Spring 2018  
Section 003 (CRN 21083): Tuesdays and Thursdays, 11:00am-12:15pm, Langdale Hall 305  
Professor: Garth Heutel  
gheutel@gsu.edu; (404) 413 0159; Twitter: @GarthHeutel  
Office: AYS 436  
Office Hours: Tuesdays and Thursdays, 1:30pm-2:30pm  

Prerequisites: Econ 8100 and Econ 8120  

Catalog Description  
This course is part of a two-course sequence designed to provide students with a working knowledge of the most important models and analytical techniques used in the design of public policy for the management and conservation of natural and environmental systems; environmental benefits measurement; and dynamic models of natural resource management.  

Course Objective  
This class is one of two in the environmental economics PhD field. The classes can be taken in any order.  

This class will look at public goods and externalities in the environmental context. It will consider policy tools and other institutions for addressing these effects. It will also consider the problem of estimating people’s demand for environmental goods, necessary information for some policy approaches. Finally, it will consider applied evaluation of some policies.  

The course’s objectives are to introduce you to environmental problems and policy solutions, to teach state-of-the-art econometric procedures for designing and evaluating policies, and to give you practice in the activities of professional research economists.  

Method of Instruction  
ECO 9310 is taught through a combination of lecture, discussion, individual presentations, and examinations.  

Course Materials  
No textbook is required. However, lectures in the first few weeks of the course are based on chapters in Microeconomic Theory by Mas-Colell, Whinston, and Green (MWG), Microeconomics by Goolsbee, Levitt, and Syverson (GLS), and Microeconomic Theory: Basic Principles and Extensions by Nicholson and Snyder (NS), 10th edition. Those books are recommended.  

Another recommended book is A Course in Environmental Economics by Phaneuf and Requate.  

Much of the reading will be journal articles that are available online via the university library. If anything is unavailable via the library, I will make it available on iCollege (please let me know if there is something that you cannot find).  

Access to GSU’s learning management system, iCollege, (formerly called Desire2Learn (D2L), formerly called Brightspace), is required. It is recommended that students check the iCollege course website at least once between class meetings. Students may set up notifications in iCollege so that they are automatically alerted to new iCollege emails and announcements.
iCollege can send such notifications to an email account of their choice or via text messaging. Student help for iCollege can be found here. It is critical that students have access to a reliable internet connection throughout the semester, especially because of the required online material. There are multiple computer labs on campus that students may use; see here for more information about locations and hours.

**General Course Outline**
We will cover these topics:
Theoretical foundations of environmental economics
The distribution of the costs of environmental policy
The distribution of the benefits of environmental policy
Environmental policy design
Dynamic models and integrated assessment models
Behavioral economics and the environment

**Grading Policy**
See the table for details on how grades will be determined.

<table>
<thead>
<tr>
<th>Component of Grade</th>
<th>Weight</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midterm exam</td>
<td>20%</td>
<td>Thursday, February 1st</td>
</tr>
<tr>
<td>Presentation of published paper</td>
<td>10%</td>
<td>2/15, 2/22, 3/1, and 3/6</td>
</tr>
<tr>
<td>Referee report of working paper</td>
<td>10%</td>
<td>Tuesday, March 6th</td>
</tr>
<tr>
<td>IAM simulation</td>
<td>10%</td>
<td>Thursday, March 29th</td>
</tr>
<tr>
<td>Original research paper</td>
<td>30%</td>
<td>Thursday, April 12th (plus intermediate deadlines)</td>
</tr>
<tr>
<td>Presentation of original research paper</td>
<td>10%</td>
<td>4/12, 4/17, 4/19, 4/26</td>
</tr>
<tr>
<td>Attendance and Participation</td>
<td>10%</td>
<td>Daily</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100%</td>
<td></td>
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The overall course grade is calculated in iCollege, and at any point in the semester, students may see their current overall grade in iCollege. Overall course grades are rounded to the nearest hundredth of a percent (two decimal points). End-of-semester letter grades will be assigned based on the overall course percentage grade according to the following:

- 100.00% and higher: A+
- 94.00% – 99.99%: A
- 90.00% – 93.99%: A–
- 87.00% – 89.99%: B+
- 84.00% – 86.99%: B
- 80.00% – 83.99%: B–
- 77.00% – 79.99%: C+
- 74.00% – 76.99%: C
- 70.00% – 73.99%: C–
• 60.00% – 69.99%: D
• 59.99% and lower: F

Although unlikely, a curve may be imposed at the discretion of the instructor. If so, grades will only be curved upwards and never downwards. Thus, a curve will never hurt you and may help you. However, you should not count on there being a curve.

**Midterm Exam**
The midterm exam will be held in class on Thursday February 1. It will be on paper, and no notes, books, laptops, cellphones, calculators, or other materials are allowed.

Georgia State University and the Department of Economics have strict expectations of academic integrity. For any exams/quizizes administered online, it is expected that such exams/quizizes be the student’s independent, individual work without assistance. Assistance from any persons, notes, books, consultations, groups, electronic devices, previous course exams, or any other sources is strictly prohibited and considered to be a breach of academic honesty. A breach of academic honesty has serious consequences including expulsion. The University's academic honesty policy can be read here: [http://deanofstudents.gsu.edu/student-conduct/academic-honesty-policy/](http://deanofstudents.gsu.edu/student-conduct/academic-honesty-policy/)

All free-response, essay, and short-answer questions are expected to be written in the student's own words.

There will be absolutely no make-up exams. A missed midterm will count as a zero.

**Presentation of Published Paper**
Each student will be assigned to lead the class discussion for 25 minutes of one class period. This amounts to reading the paper assigned for that day, preparing a presentation of the paper, and leading a class discussion. Slides are strongly recommended, and handouts are optional. Each student will choose a paper from the list of readings or of his or her own choosing, subject to the instructor's approval (do not choose one of the required papers with an asterisk next to it). Choose a presentation paper and have it approved by me no later than January 23rd. The presentations will be held on February 15, February 22, March 1, and March 6. The order of presentations will be determined after the papers have been selected, based on their topics.

**Referee Report of Working Paper**
You must pick a recent (within three years) working paper to review. Excellent places to find such papers include:
- the NBER environment/energy group ([http://www.nber.org/papersbyprog/EEE.html](http://www.nber.org/papersbyprog/EEE.html))
- the NBER environmental meetings ([http://www.nber.org/summer-institute/](http://www.nber.org/summer-institute/), choose a year and select the <eee> line

But you are not limited to these. If you are thinking strategically the paper will be related to your own research paper (see below). Choose a working paper and have it approved by me no later than February 13. The assignment is due on Thursday March 6.
You must provide constructive comments to the author, in an anonymous report about 2-3 pages in length.

I will post sample referee reports. Here are some guides on writing referee reports:


IAM Simulation
You will work with the Matlab code for DICE, an integrated assessment model, to conduct sensitivity analysis over a simulation of optimal climate policy. You will write up a brief 1-2 page summary of your results, plus graphs and/or tables. More details on this assignment will be made available later in the semester. The deadline is Thursday March 29.

Original Research Paper
A paper on the topic of your choosing is due on Thursday April 12. This paper should include a review of the literature relevant to your chosen topic and the groundwork for an original research idea, including a preliminary empirical analysis. The topic should come from environmental economics. For the literature review, define the problem or question, summarize how other papers have addressed the question and how they have answered the question, identify any weaknesses in the literature, and identify gaps or areas of further study. Then, propose a research plan for an original project related to the literature. There is no page length requirement, but between 20-30 pages (12 point font, double spaced, 1-inch margins) is appropriate.

Plan on meeting with me individually at the beginning of February to discuss possible paper topics. Your topic must be approved by me no later than February 13th. In class on February 13th, each student will present a brief (1-2 minute) outline of his or her paper topic.

Plan on meeting with me individually in the beginning of March (before spring break) to discuss the progress of your paper.

Deadlines for Parts of Research Paper
Details on what is required for each part of the research paper will be provided throughout the semester.
Topic approved and brief outline: February 13
6-paragraph introduction and abstract: February 20
Literature review: March 8
Data description: March 27
Empirical methodology: April 3
Final paper deadline: April 12

Presentation of Original Research Paper
On the last several class days and on the final exam date, each student will present (30 minutes) his or her final paper. The order of presentation dates will be assigned at random.

Attendance and Participation
Attendance is mandatory. For any class period that is missed, a make-up assignment must be turned in within 48 hours of the class period. The make-up assignment is an essay summarizing the material covered in the class lecture that day. This can be accomplished with a thorough reading of the required paper(s), plus reading some or all of the additional recommended papers. You can also use a classmate's notes, though all of the essay must be in your own words. The minimum length of the essay is 2,000 words. Failure to turn in the make-up assignment after an absence will result in the attendance grade (worth 10% of the overall grade) dropping to zero. Any student with more than two absences must meet with me to discuss their progress in the class.

The University's attendance policy can be read here.

You are expected to participate in class discussions, for which it will be necessary to read the assigned paper(s) ahead of class.

**Twitter**
I occasionally use Twitter to post about news that is relevant for the course. If you want to, you can follow me at @GarthHeutel. Students can also ask and answer course-related questions on Twitter.

**Important Notes:**
1. The course syllabus provides a general plan for the course; deviations may be necessary.
2. All students are responsible for knowing and adhering to GSU’s Policy on Academic Honesty as published in Student Code of Conduct Handbook.
3. Your constructive assessment of this course plays an indispensable role in shaping education at Georgia State. Upon completing the course, please take time to fill out the online course evaluation.
4. Students who wish to request accommodation for a disability may do so by registering with the Office of Disability Services. Students may only be accommodated upon issuance by the Office of Disability Services of a signed Accommodation Plan and are responsible for providing a copy of that plan to instructors of all classes in which accommodations are sought.
5. Students who withdraw after the midpoint of each term will not be eligible for a “W” except in cases of Emergency Withdrawal.
6. Important University dates can be found at http://registrar.gsu.edu/registration/semester-calendars-exam-schedules/
7. Georgia State University values diversity and is committed to fostering and maintaining an educational environment which appreciates individual differences in all areas of operation including classroom instruction, texts, and materials. To this end, any actions, practices, or processes by any faculty, staff person, or student that discriminates against or is prejudicial toward any person or group based on race, gender, age, religion, ethnicity, nationality, disability, sexual orientation, or socioeconomic status will not be tolerated.

**Miscellaneous Requests/Advice:**
• No talking to your neighbors during class, even if you are discussing the class. If you have questions raise your hand, or wait to ask them during office hours.
• No cell phone/tablet/texting during class.
• I prefer that you do not use laptops during class. But, if you prefer, you may use them during lectures only to reference the papers that we are discussing.

Calendar:
Please complete the assigned reading for each day before the day's lecture. Papers denoted with an asterisk are required reading; all other readings are recommended.

Calendar is tentative and subject to change throughout the semester.

Tuesday January 9
Edgeworth Exchange Economies
Reading:
MWG 15.B

Thursday January 11
Production in GE models
Reading:
MWG 15.C and 15.D

Tuesday January 16
Fundamental Theorems
Reading:
MWG 16.B-16.D

Thursday January 18
Externalities
Reading:
MWG 11.B
GLS 16.1-16.2

Tuesday January 23
Deadline for choice of presentation of published paper
Externalities
Reading:
MWG 11.B
GLS 16.1-16.2

Thursday January 25
Public Goods
Reading:
MWG 11.C
GLS 16.4

Tuesday January 30
Externalities and Public Goods
Reading:
Thursday February 1
**Midterm Exam**

Reading:
*National Bureau of Economic Research, Environmental and Energy Economics Program Report*

Tuesday February 6
**The Distribution of Costs of Environmental Policy**

Reading:
*Fullerton, Don, "Six Distributional Effects of Environmental Policy," Risk Analysis, 31(6), June 2011, 923-929.*


Parry, Ian and Roberton Williams, "What are the Costs of Meeting Distributional Objectives for Climate Policy?" *B.E. Journal of Economic Analysis and Policy, Symposium* 10(2), 2010.

Thursday February 8
**The Distribution of Costs of Environmental Policy**

Reading:


Tuesday February 13
**Deadline for choosing working paper for referee report**
**Deadline for topic of original research paper**
**The Distribution of Benefits of Environmental Policy**

Reading:


Thursday February 15

**Student Presentations – Published Paper**

Tuesday February 20

**Deadline for Original Research Paper Introduction and Abstract**

**Environmental Policy Design**

Reading:


Thursday February 22

**Student Presentations – Published Paper**

Tuesday February 27

**Environmental Policy Design**

Reading:


Thursday March 1
**Student Presentations – Published Paper**

Tuesday March 6
**Deadline for Referee Report**
**Student Presentations – Published Paper**

Thursday March 8
**Deadline for Original Research Paper Literature Review**
No class meeting – individual meetings with professor to discuss original research paper (scheduled TBD)

Tuesday March 13
**Spring break; no class**

Thursday March 15
**Spring break; no class**

Tuesday March 20
**Dynamic Models and Integrated Assessment Models**
Reading:


Thursday March 22
Dynamic Models and Integrated Assessment Models

Reading:


Tuesday March 27

**Deadline for Original Research Paper Data Description**

Dynamic Models and Integrated Assessment Models

Reading:


Thursday March 29
**Deadline for IAM Simulation**

**Behavioral Economics and the Environment**


Tuesday April 3
**Deadline for Original Research Paper Empirical Methodology**
No class meeting – individual meetings with professor to discuss original research paper (scheduled TBD)

Thursday April 5
No class meeting – individual meetings with professor to discuss original research paper (scheduled TBD)

Tuesday April 10
**Behavioral Economics and the Environment**


Thursday April 12
Deadline for Original Research Paper
Final Paper
Student Presentations – Original Research Paper

Tuesday April 17
Student Presentations – Original Research Paper

Thursday April 19
Student Presentations – Original Research Paper

Tuesday April 24
No class

Thursday April 26
(Final Exam period – 10:45am – 1:15pm)
Student Presentations – Original Research Paper