

**Economics 432: Environmental Economics**  
**01:220:432:01**  
**Rutgers University, Spring 2023**  
**MW 2 pm, Murray Hall 210**

Professor Hilary Sigman

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Office hours at this [Zoom link](#) (or see Canvas): Mondays 10:30-11:30 am or by appointment

**Course overview:** This course uses economics to analyze public policies for environmental protection. We will discuss the role of environmental policy in a market economy, tools for evaluating public policies, and conventional and incentive-based approaches to environmental policy. Along the way, we will apply the analysis to specific areas of environmental policy and end the class with an extended application to public policy for climate change.

**Learning outcomes:** Students will build on their understanding of microeconomics and learn to apply economic analysis to environmental issues. The classwork will strengthen mathematical and graphical analysis skills from earlier economics classes. Students will also develop their understanding of econometrics in practice by learning about empirical studies in environmental economics. Finally, the course aims to deepen students' knowledge of environmental challenges and recent public policy responses to them.

**Prerequisites:** Intermediate Microeconomics and Econometrics. This class is an "upper-level" elective for the Economics major.

**Class web site:** The class has a [Canvas](#) website with presentations, readings, problems, and sample exam questions. Materials are arranged in weekly Canvas Modules. The materials on the website are for your personal use only. You may not repost these materials to other sites. Please make sure that the e-mail address that you have for messages from Canvas is one you check regularly.

**Readings:** The main text, *Markets and the Environment*, 2<sup>nd</sup> edition, Nathaniel O. Keohane and Sheila M. Olmstead (Island Press, 2016, ISBN: 978-1-61091-607-3) The textbook is available free as an [e-book](#) from [Rutgers University Libraries](#). In addition, the RU Bookstore should have some copies for sale. The textbook is somewhat less advanced than the class. To provide more technical background and expand the covered topics, other readings will be posted in the Canvas modules as the term progresses. Unless otherwise indicated, reading the text and other materials is required classwork.

**Clickers:** Starting with the third class, each class period will include a few clicker questions. Any version of the physical iClicker will work (but not the smartphone/laptop app). Please register your clicker on Canvas if you have not already done so for a previous class. Correct answers will be worth 2 points with 1 point for any response. Your lowest 5 class clicker scores

will be dropped. These dropped scores can serve as an automatic excuse for illness, conflicts, or a forgotten clicker. No other excuses will be available. I will occasionally audit clicker scores by asking students to demonstrate that they are attending classes. Clicker points will be rescaled to contribute 10% of the overall course grade.

**Exams:** Two in-class midterm exams (**Wed, Feb 22** and **Mon, April 3**) and a cumulative final exam at the time scheduled by the Registrar (**Tuesday, May 9, 12 -3 pm**). Please check to be sure that you can attend all the exams before deciding to take the class. Except in cases of *documented* medical necessity or family emergency, there will be no alternative exam dates. The exams will be mostly multiple choice with a few open-ended questions.

**Grading policy:** Course grades will be based on clicker scores (10%), midterms (22.5% each), and final (45%). All course grades will be curved. No extra credit assignments will be available for any reason and no other criteria or weights will be used in assigning grades.

**Academic Integrity:** Students must submit their own work and respond with their own clickers. Even initial violations of academic integrity will be taken extremely seriously and may result in grade penalties, disciplinary sanctions, or educational sanctions. For more information, please consult the [Rutgers academic integrity policy](#).

**Student Wellness Services:** Counseling, ADAP & Psychiatric Services (CAPS): (848) 932-7884 [www.rhscaps.rutgers.edu](http://www.rhscaps.rutgers.edu). Please take care of yourself and your fellow students.

## Spring 2023 Calendar

### Rutgers Economics 432: Environmental Economics Professor Sigman

Day	Topic	Reading (ch/pp in Keohane & Olmstead)
W, 1/18	Economics and the environment	pp. 12-30 in ch 2 & pp 74-78 in ch 4
M, 1/23	Public goods	pp. 85-91 in ch 5
W, 1/25	Public goods/Externalities	pp. 80-85 in ch 5
M, 1/30	Externalities/Property rights	pp. 140-143 and p. 144 box in ch 8
W, 2/1	Valuing the environment: Travel cost	Reading on Canvas
M, 2/6	Valuing the environment: Hedonics	Reading on Canvas
W, 2/8	Valuing the environment: Stated preference	pp. 52-55 and pp. 46-48 (WTP/WTA) in ch 3
M, 2/13	Valuing risk reduction	Reading on Canvas
W, 2/15	Cost benefit comparisons	pp. 55-65 in ch 3
M, 2/20	Problems	
<b>W, 2/22</b>	<b>*First Midterm Exam</b>	
M, 2/27	Design of environmental policy; Standards	pp 169-176 in ch 9
W, 3/1	Taxes and subsidies	pp. 144-159 in ch 8
M, 3/6	Emission trading	pp. 177-178 in ch 9 and pp. 200-207 (on EU ETS) in ch 10
W, 3/8	Taxes vs trading	pp. 160-166 in ch 8 and pp. 190-194 in ch 9
M, 3/20	Incentives for innovation	pp. 179-184 in ch 9
W, 3/22	Monitoring and enforcement	Reading on Canvas
M, 3/27	Legal liability as environmental policy	Reading on Canvas
W, 3/29	Problems	
<b>M, 4/3</b>	<b>*Second Midterm Exam</b>	
W, 4/5	Income, growth, and the environment	Box on p. 235 and pp. 245-52 in ch 11
M, 4/10	International trade and the environment	Reading on Canvas
W, 4/12	Estimating climate change harms	Readings on Canvas
M, 4/17	Social cost of carbon/discounting	Readings on Canvas
W, 4/19	International agreements	Readings on Canvas
M, 4/24	Climate policy	Reading on Canvas
W, 4/26	Climate policy	
M, 5/1	Problems	
<b>Tu 5/9 Noon-3pm</b>	<b>*Final Exam (cumulative)</b>	