ECON 335: Environmental Economics

Prof. Moon Joon Kim

Spring 2022
George Mason University Korea

E-mail: mkim238@gmu.edu
Phone: TBA
Office Hours: M 1:00-2:45pm or by appointment
Office: TBA

Web: **TBA**
Class Hours: Tue 9:00–11:40am
Class Room: TBA
Credit Hours: 3

Course Description

ECON 335 is a major elective for ECON students and also fulfills Environment concentration for GLOA students. This course is also a "Green Leaf" course that focuses on learning about sustainability. The Green Leaf designation recognizes offerings that contribute significantly to students' understanding and practice of sustainability. Mason's Green Leaf curricula comprise both sustainability-focused and sustainability-related courses, and ECON 335 is a ***sustainability-focused*** course providing valuable grounding in the concepts and principles of sustainability. This course educates students about how different dimensions of sustainability relate to and support each other in theory and practice. In addition, this course helps equip students with the skills to weave together disparate components of sustainability in addressing complex issues.

This course provides an overview of environmental economics by introducing analytical methods and tools to analyze environmental problems and identify policy solutions. The first part of the course provides a microeconomic foundation of environmental economics, with a focus on market efficiency and market failures. The second part introduces environmental policy decision tools such as benefit-cost analysis and cost-effectiveness criterion. In particular, this part focuses on benefits estimation including revealed preference approaches and stated preference approaches. The third part discusses environmental regulation, with topics covering command-and-control regulation, market-based approaches, and behavioral interventions. The challenges of applying economic instruments to real world environmental problems will be also discussed, such as time and space, risk and uncertainty, compliance and enforcement, etc. This course is expected to stimulate critical thinking about environmental challenges and policy solutions.

Student Learning Outcomes

Students should be familiar with basic microeconomic concepts such as: supply and demand functions, consumer and producer surplus and deadweight loss, opportunity cost, marginal

analysis, and time discounting. Students also need a working knowledge of calculus, including familiarity with partial differentiation. Students completing this course will be able to

- Demonstrate understanding of the economic cause of environmental problems, environmental valuation techniques, environmental policy instruments and their economic consequences, and environmental policy decision making tools
- Critically analyze the environmental policy practices in the real world using economics methods and tools
- Apply knowledge of environmental economics, including analytical tools and methods, to identify policy solutions that can correct environmental problems
- Engage in self-directed research and learning about environmental economics

Required Text

Kolstad, Charles D., ***Intermediate Environmental Economics*** (International Edition), 2011, 2nd edition, Oxford University Press, ISBN: 9780199732654

Optional Text

For those looking for additional textbooks to supplement the main topics or for more in-depth coverage to areas you might be interested in pursuing, you may wish to read:

- Tietenberg, Thomas H. and Lewis, Lynne, ***Environmental and Natural Resource Economics*** Environmental and Natural Resource Economics, 11th edition, 2018, ISBN 9781138632295
- Stavins, Robert N., ***Economics of the Environment Selected Readings***, 7th edition, 2019 ISBN: 9781788972079

Prerequisites

ECON 103 Microeconomic Principles, ECON 104 Macroeconomic Principles

Course Structure

This course will be taught through a combination of assigned readings, lecture, course project, and examinations. Class interaction allows the students to discover the strengths and weaknesses of alternative policy recommendations.

Assigned Readings

Textbook and other assigned readings present relevant topics, which will be covered more depthfully in class lecture. In class discussion of readings, instructor highlights most relevant reading topics and shows by example how to present data in a stimulating way, consistent with achieving course objectives.

Lecture

Lectures will be highly interactive. Instructor prompts students for response to questions posed and solicits his/her thoughts on issues discussed. Additionally, instructor provides concrete, real–world examples to illustrate concepts. Lecture format reinforces by example appropriate methods for asking questions, gaining relevant insights, and making appropriate recommendations.

Exams

Exams will be closed-book and be composed of true/false questions, multiple choice, essay questions, some calculations that test students' ability to apply concepts discussed through the exam date. Cheating and plagiarism will not be tolerated. Any violation of the Institute's Honor Code will be reported to the Dean of Students Office. Non–programmable calculators are allowed. You are not allowed to use smartphones and tablets as calculators. Hence, please don't forget to bring your regular calculator on exam days.

Course project: Research proposal

At the end of term students will submit a proposal that articulates a research question, describes the contribution to the literature, outlines the data to be used and proposes an empirical strategy. Preliminary results are not necessary, but add to the strength of the proposal. At the end of term students will also give a brief 10–15 minute presentation on the idea. In weeks 6-9 you will deliver a research pitch in the form of an 'egg-timer': a 3 minute pitch of your idea.

Grading Policy

Students will be evaluated on the basis of problem sets, exams, course project, and attendance. These components will be weighted as follows:

- 30% Midterm exam
- 30% Final exam (cumulative)
- 10% Problem sets (5% each)
- 20% Course project and presentation
- 10% Attendance (–1% for each unexcused absence)

Based on the cumulative grade, final grade will be specified as:
A+ = 97% and higher;A = 94% and higher; A- = 90% and higher; B+ = 87% and higher; B = 84% and higher; B- = 80% and higher; C+ = 77% and higher; C = 74% and higher; C- = 70% and higher; D = 60% and higher; F= below 60%

Course Policies

Class Attendance

Students are expected to engage in active classroom discussion, thus class participation and attendance is mandatory. This includes submitting assignments, leading discussions and participate classroom debates. Although students are expected to attend all classes and I will be checking attendance regularly, there might be emergencies that do not require medical care or that are difficult to prove. Thus, students will be excused for ONE unanticipated/urgent absence during the semester and it will not affect your final grade. A student who misses a class more than 5 times for any reason will be automatically dropped from the course.

Email

GMU faculty and students are required to use GMU email accounts to communicate. You must regularly check your GMU email address, as important updates will be sent that way. Emails that I send to our class will also be posted as Blackboard announcements which you can view on the "Home Page" of our course Blackboard.

Electronics

Laptops and cell/smart phones will NOT be allowed in class. This is because they undermine the user's ability to learn effectively as well as those nearby the user. However, students are permitted to use laptops for their presentation.

Policy on Make–up Work

Students are allowed to make up work only for medical reasons, consistent with GMU Korea policy, except quizzes. You must notify the instructor in advance if you will miss a report or presentation.

University Policies and Resources

Academic Integrity

George Mason University has an Honor Code with clear guidelines regarding academic integrity. Please see http://honorcode.gmu.edu/ to ensure that you abide by it. If you are uncertain about citation rules or assignment guidelines, ask me for clarification. No grade is important enough to justify academic misconduct. If you feel unusual pressure or anxiety about your grade in this or any other course, please let me know and also seek help from University resources.

Academic Resource Center

The Academic Resource Center offers tutoring and workshops to support your academic progress. To discuss academic support resource available to you, please contact Eunmee Lee, Ph.D., Director of the Academic Resource Center at elee45@gmu.edu. (https://masonkorea.gmu.edu/resources-andservices/academic-resource-center)

Counseling and Wellness

Counseling and Wellness aims to provide comprehensive support services that promote the personal, social, and academic success of George Mason University Korea students. (https://masonkorea.gmu.edu/resources-and-services/counseling-and-wellness

Disability Services

Disability Services at George Mason University is committed to providing equitable access to learning opportunities for all students. If you are seeking accommodations for this class, please visit the Disability Services office (https://masonkorea.gmu.edu/resources-and-services/disability-services)

Course Schedule

The schedule is tentative and subject to change. I reserve the right to adjust the pace of the course and the content covered as is necessary. Each exam will test on the material that was taught up until 1 week prior to the exam.

*AR: assigned readings

Week 01, 02/21 - 02/25: INTRODUCTION (AR: Chapter 1 & 2)

- Syllabus overview
- Chapter 1. The Environment and Economics
- Chapter 2. Normative and Positive Economic Analysis

Week 02, 02/28 - 03/04: How Much Environmental Quality? (AR: Chapter 3 & 4)

- Chapter 3. Social Choice: How Much Environmental Protection?
- Chapter 4. Efficiency and Markets

Week 03, 03/07 - 03/11: How Much Environmental Quality? (AR: Chapter 5)

- Chapter 5. Market Failure: Public Goods, Public Bads and Externalities

Week 04, 03/14 - 03/18: How Much Environmental Quality? (AR: Chapter 6)

- Chapter 6. Making Decisions about Environmental Programs

Week 05, 03/21 - 03/25: How Much Environmental Quality? (AR: Chapter 7)

- Chapter 7. Demand for Environmental Goods
- Special topic: How to make a good presentation?

Week 06, 03/28 - 04/01: How Much Environmental Quality? (AR: Chapter 8)

- Chapter 8. Hedonic Price Methods

Week 07, 04/04 - 04/08: How Much Environmental Quality? (AR: Chapter 9 & 10)

- Chapter 9. Household Production
- Chapter 10. Constructed Markets

Week 08, 04/11 - 04/15: **Midterm Exam**

Week 09, 04/18 - 04/22: Regulating Individuals and Firms (AR: Chapter 11)

- Chapter 11. Regulating Pollution
- Chapter 12. Prices

Week 10, 04/25 - 04/29: Regulating Individuals and Firms (AR: Chapter 12)

- Chapter 13. Property rights

Week 11, 05/02 - 05/06: Regulating Individuals and Firms (AR: Chapter 13)

- Chapter 14. Spatial and Temporal Issues

Week 12, 05/09 - 05/13: Regulating Individuals and Firms (AR: Chapter 13)

- Chapter 15. Regulating Polluters with Unknown Costs

Week 13, 05/16 - 05/20: Regulating Individuals and Firms (AR: Chapter 14)

- Chapter 16. Audits, Enforcement and Moral Hazard

Week 14, 05/23 - 05/27: Regulating Individuals and Firms (AR: Chapter 15)

- Chapter 17 .Voluntary Actions and Agreements

Week 15, 05/30 - 06/03: Advanced Topics (AR: Chapter 18)

- 18. Risk and Uncertainty
- Research proposal presentation
- Research proposal due*

Week 16, 06/06 - 06/10: **Reading week**

Week 17, 06/13 - 06/17: **Final Exam**