Duke Kunshan University
Master of Environmental Policy
ENVIRON 805K: Environmental Economics
Fall 2018

Time: Monday 1:00-3:30p
Location: CC1103
Instructor: Junjie Zhang, CC 2008, (0512) 3665-7068, junjie.zhang@duke.edu
Office Hour: Wednesdays 2:00-4:00 pm

Prerequisits: Students are required to have taken an introductory microeconomics course. 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 without a background in economics or calculus are required to have participated a summer boot camp organized by the iMEP program. Students can also meet the prerequisites by taking courses in other institutions, as long as evidence of proficiency can be provided.

Course Description: 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.

Course Goals: 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; Demonstrate the ability to model environmental policy issues using fundamental environmental economics skills; Engage in self-directed research and learning about environmental economics.

Readings:

Required resources:

- EE: Kolstad, Charles D. 2011. Environmental Economics (2nd Edition). Oxford University.

Recommended resources:

- EOE: Stavins, Robert N., ed. 2012. Economics of the Environment: Selected Readings (Sixth Edition). W.W. Norton & Company.

- KO: Keohane, Nathaniel O. and Sheila M. Olmstead. 2007. Markets and the Environment. Island Press.

- FF: Field, Barry and Martha K. Field. 2012. Environmental Economics: An Introduction. McGraw Hill.

Other materials may be provided, as determined by the instructor. Other course readings will be available on the course SAKAI site. The readings will include current research papers as well as papers from international organizations and policy institutions. Students are expected to read the chapters and papers before class and be prepared for class discussion. The students are also encouraged to select readings from the international media that cover global environmental news.

Course Format: The course will be mainly run as lectures with active student participation. The instructor will present basic materials on each topic. The instructor will also lead the class in discussing the designated readings.

Students are expected to engage in active classroom discussion, thus class participation and attendance is mandatory. This includes reading assigned articles, submitting reading reports, leading discussions and participate classroom debates.

Grading: Students are expected to finish reading and preparing course materials before class. There are 3 problem sets, 2 quizzes, and 1 final exam. The course grade will be based on:

Problem sets: 50% (10*5% each)
Mid term: 25%
Final exam: 25%

The students can form study groups to work on problem sets and help each other learn. However, each student must submit his or her own copy of the assignment and students are not allowed to directly copy another students work. Students may NOT use any materials from prior offerings of this course to assist them in completing their assignments.

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

Academic Integrity: Each student is bound by the academic honesty standard of the Duke Kunshan University. Its Community Standard states: Duke Kunshan University is a community composed of individuals of diverse cultures and backgrounds. We are dedicated to scholarship, leadership, and service and to the principles of honesty, fairness, respect, and accountability. Members of this community commit to reflect upon and uphold these principles in all academic and non-academic endeavors, and to protect and promote a culture of integrity.

Course Outline

Week 1: Overview of Environmental and Resource Economics

- EE: Chapters 1-2
- PS 1 distributed

Week 2: Market Efficiency and Market Failures

- EE: Chapters 3, 4, 5 (except 5.V)
- PS 1 due, PS 2 distributed

Week 3: Cost-Benefit Analysis

- EE: Chapters 6-7
- PS 2 due, PS 3 distributed

Week 4: Hedonic Price Methods

- EE: Chapter 8
- PS 3 due, PS 4 distributed

Week 5: Household Production

- EE: Chapter 9
- PS 4 due, PS 5 distributed

Week 6: Constructed Market

- EE: Chapter 10
- PS 5 due, PS 6 distributed

Week 7: Mid-term exam and Lecture

- The mid-term exam lasts 1.5 hours. It covers the content in the previous 6 weeks.

- Lecture: regulating pollution (EE: Chapter 11)

Week 8: Environmental Regulation: Tax

- EE: Chapter 12
- PS 6 due, PS 7 distributed

Week 9: Environmental Regulation: Cap-and-Trade

- EE: Chapter 13
- PS 7 due, PS 8 distributed

Week 10: Simulation and Lecture

- Simulation: The instructions will be distributed before class.
- Lecture: space and regulation (EE: Chapter 14.I)

Week 11: Choice of Instruments

- EE: Chapter 15 (II and III)
- PS 8 due, PS 9 distributed

Week 12: Topics

- EE: Chapters 16, 17 (except III.A)
- PS 9 due, PS 10 distributed

Week 13: Economic Growth, Trade, and the Environment

- EE: Chapters 19 (except I.B, II.B, and III.D), 20
- PS 10 due