

ENVIRONMENTAL ECONOMICS (FALL 2017)

ECONOMICS 335 (SECTION 1)

ADMINISTRATIVE DETAILS

TIME: Mondays, 7:20-10:00 P.M.
PLACE: Exploratory Hall L-003
INSTRUCTOR: William (Bill) McNaught
EMAIL: wmcnaught1@verizon.net (preferred) and wmcnaugh@gmu.edu
PHONE: H: 703-777-3182 (preferred) and C: 703-209-2032

OBJECTIVE

Students will learn about the major environmental challenges of the 21st century; how a variety of public policies could reduce these challenges; and how economic theory can improve these policies.

MATERIALS

TEXT

•[TL] Tom Tietenberg and Lynne Lewis, *Environmental and Natural Resource Economics*, 10th Edition

BLACKBOARD

- [CC] C. Candelise in P. Eakins, M. Bradshaw and T. Wates, *Global Energy*: Chapter 18, "Solar Energy: An Untapped Growing Potential"
- [EC] *The Economist*: August 8, 2015: "A Modern Ark", "If All Else Fails", "Hotter than August", "Second Best Solutions", July 15, 2017, "It's Not the Heat, It's the Cupidity" and August 19, 2017, "The Lives of Others"
- [JG] J. Goodell, *Rolling Stone*, August 10, 2017, "Scott Pruitt's Crimes Against Nature"
- [FI] F. Incropera, *Climate Change: A Wicked Problem*: Chapter 2, "Earth's Climate System"; Chapter 3, "Greenhouse Gases"; Chapter 4, "Global Warming"; Chapter 7, "Public Policy Options"; Chapter 8, "Politics of Global Warming"; Chapter 9, "Dissenting Opinions" and Chapter 10, "Ethics of Climate Change"
- [NGM] N. Gregory Mankiw, *Principles of Microeconomics*: Chapter 4: "Forces of Supply and Demand"; Chapter 10: "Externalities" and Chapter 11: "Public Goods and Common Resources"
- [MM] M. Maslin, *Climate Change: A Very Short Introduction*: Chapter 3, "Evidence for Climate Change" and Chapter 7, "Politics of Climate Change"
- [BM] Bill McKibben, *ERolling Stones*, July 23, 2017, "The Climate Test"
- [MBN] R. L. Miller, D. K. Benjamin and D. North, *The Economics of Public Issues*, 18th Edition: Chapter 7, "All Fracked Up"; Chapter 9, "Are We Running Out of Water?"; Chapter 20, "The Deception of Green Energy"; Chapter 25, "Save That Species"; Chapter 26, "The Economics of Global Warming" and Chapter 28, "The Trashman Cometh"
- [JS] Jeffrey Sachs, *Common Wealth*: Chapter 3, "The Anthropocene"; Chapter 4, "Global Solutions to Climate Change" and Chapter 5, "Securing Our Water Needs"
- [GW] Gordon Walker, *Environmental Justice*: Chapter 1: "Understanding Environmental Justice" and Chapter 2: "Globalizing and Framing Environmental Justice"

COURSE POLICIES

The instructor assumes that all students have completed an introductory course in microeconomics, probably GMU's Econ 103, but possibly NVCC's Eco 202. If a student has not, he/she should notify the instructor. Additional experience with macroeconomics, perhaps through GMU's Econ 104, would also be helpful.

Most sessions the class will examine one or two chapter(s) from the textbook or related books on environmental topics. To refresh students' grasp of the basic microeconomic concepts, the course begins with a quick review of microeconomic theory using Powerpoint slides from Greg Mankiw's textbook *Principles of Microeconomics* (available on Blackboard.) The instructor will occasionally supplement the textbook with extra readings. Lecture notes for each daily session will be posted to Blackboard.

Disability Policy

A few students may need accommodations for a disability, usually involving extra time during tests. The instructor, who himself is disabled, will do his best to make accommodations for students who present him with GMU's form certifying their disability.

Honor Policy

The instructor graduated from the U. S. Air Force Academy and believes strongly in academic integrity. Students using someone else's work without proper attribution will be reported to GMU's Honor Council.

Office Hours and Other Items

As an adjunct professor without his own office, the instructor does not hold formal office hours. In the past students have found it easier to ask questions by email, but if they would like a personal meeting, scheduling an appointment a few minutes before class (6:30 P.M.?) might be most convenient. Students wishing another view on the economics of externalities may wish to know the instructor is also teaching Econ 309 (Economics of Public Policies) Tuesdays and Thursdays in Enterprise 274 at 1:30 P.M. He will be discussing externalities and climate change in this course on September 21st through 28th.

GRADES

Grades will be determined through two graded exams and a short paper. Additionally, students may write an extra credit paper. All assignments will be graded on a standard 100-point scale and averaged to determine the final numerical grade. (Each exam will be graded on a 103-point scale providing students with 3 points of extra credit.) Letter grades probably will be set using the traditional grade scale of 90-100 A, 80 to 89 B, etc. Within each letter range the instructor will award some "+"s and "-"s. For example, an 81 would be a B- and a 98 would be an A+.

Exams

The midterm exam covering only chapters 1 through 7 in the textbook will be given during the second half of class on October 16th. The final exam covering only material covered since the midterm will be given on December 18th. Both exams will combine multiple-choice

questions, matching of terms and two short-answer questions. Matching and multiple-choice questions will test students' knowledge of key economic terms mentioned in the readings and lectures. Each short-answer question will ask students to summarize one of the economic concepts mentioned in the text. Students will write their answers on the exam itself and do not need to bring blue books or Scantron sheets. The instructor has already posted a study guide for the midterm exam to Blackboard. The final will be similar in design; its study guide will be posted to Blackboard by November 27th.

Paper(s)

The required paper, from 4 to 5 pages (double-spaced including diagrams), should present the student's understanding of the most important current environmental issue, climate change. The paper might begin with a short description of the student's understanding of the importance of climate change as a global environmental threat. A second section might describe the policies that would mitigate this threat, e. g., command-and-control regulation, taxation of carbon energy sources and marketable permits for emissions. The final and most important section should use the economic tools gained during the course to analyze which of these policies offers the best chance of reducing the effects of climate change at minimal cost. Students also might comment on the climate change policies of the Trump Administration. A sample outline for the paper is posted to Blackboard.

Additionally, students may write a second 4-to-5 page paper for extra credit. The extra credit paper may be used to replace any of the other three graded assignments although in the past most students in this course have opted to write an extra credit paper in order to skip the final exam. The extra credit paper should address one of the following topics related to environmental economics:

- cost-benefit analysis (Chapter 3),
- depletable resource allocation (Chapter 6), or
- environmental justice (readings for December 4th).

If a student wishes to write a paper on another topic, perhaps as part of a course in his/her environmental studies major, he/she should propose a topic for this paper to the instructor. The required paper is due on December 4th and the extra credit paper is due prior to the final exam on December 18th.

COURSE SCHEDULE

AUG 28: COURSE OVERVIEW/CLIMATE CHANGE INTRODUCTION

REQUIRED READING: TL (Chapter 1); RECOMMENDED READING: JS (The Anthropocene); NOTE: Al Gore's *Inconvenient Truth* viewed in class

SEP 4: LABOR DAY (NO CLASS!)

SEP 11: MICROECONOMICS REVIEW/PUBLIC GOODS AND COMMON RESOURCES

REQUIRED READINGS: NGM (Forces of Supply and Demand) and NGM (Public Goods and Common Resources)

SEP 18: PROPERTY RIGHTS/ECONOMIC EFFICIENCY

REQUIRED READINGS: TL (Chapter 2) and NGM (Externalities); RECOMMENDED READING: EC (The Lives of Others)

SEP 25: COST-BENEFIT ANALYSIS

REQUIRED READING: TL (Chapter 3)

OCT 2: VALUING THE ENVIRONMENT/SUSTAINABLE DEVELOPMENT

REQUIRED READINGS: TL (Chapters 4 and 5)

OCT 10 (TUESDAY): DEPLETABLE RESOURCES

REQUIRED READING: TL (Chapter 6); NOTE: Class time will be set aside to discuss the midterm exam

OCT 16: ENERGY/MIDTERM EXAM

REQUIRED READING: TL (Chapter 7); RECOMMENDED READINGS: MBN (Deception of Green Energy) and MBN (All Fracked Up) and CC (Solar Energy); NOTE: Midterm taken during the second half of class

OCT 23: RECYCLING/WATER AS A RESOURCE

REQUIRED READINGS: TL (Chapters 8 and 9) and JS (Securing Our Water Needs); RECOMMENDED READINGS: MBN (The Trashman Cometh) and MBN (Are We Running Out of Water?); NOTE: Midterm exam returned, students who missed the exam on the 16th will take a makeup exam this evening

OCT 30: COMMON-POOL RESOURCES

REQUIRED READINGS: TL(Chapter 12) and NGM(Public Goods and Common Resources)

NOV 6: ECOSYSTEM SERVICES

REQUIRED READING: TL (Chapter 13), RECOMMENDED READINGS: MBN (Save That Species); EC (Modern Ark); NOTE: CBS Documentary *Climate Change and Endangered Species* viewed in class

NOV 13: OVERVIEW OF THE ECONOMICS OF POLLUTION

REQUIRED READINGS: TL (Chapter 14) and EC (The Lives of Others)

NOV 20: STATIONARY SOURCE POLLUTION/CLIMATE CHANGE (PART 1)

REQUIRED READINGS: TL (Chapters 15 and 16) and FI (Earth's Climate System), RECOMMENDED READINGS: EC (Hotter Than August) and FI (Greenhouse Gases)

NOV 27: CLIMATE CHANGE (PART 2)

REQUIRED READINGS: MM (Evidence for Climate Change) and MBN (Economics of Global Warming); RECOMMENDED READINGS: FI(Global Warming), FI (Public Policy Options), MM (Politics of Climate Change), EC (Second Best Solutions), EC (If All Else Fails), JS (Global Solutions to Climate Change, and EC (It's Not the Heat, It's the Cupidity), and JG (Scott Pruitt's Crimes Against Nature); NOTE: Study guide for the final exam posted to Blackboard

DEC 4: ENVIRONMENTAL JUSTICE

REQUIRED READINGS: GW (Understanding Environmental Justice) and GW (Globalizing and Framing Environmental Justice); RECOMMENDED READINGS: FI (Ethics of Climate Change), FI (Politics of Global Warming) and FI (Dissenting Opinions); NOTES: Class time set aside for students' questions about the final exam, Clip from documentary *Whales in the Wild* shown, and Required paper due

DEC 18: FINAL EXAM (for those taking it)

NOTE: Extra credit paper due