

ECON 4545
Environmental Economics
FALL 2019
TTH 9:30-10:45, HLMS 211

COURSE SYLLABUS

Overview:

Examines the effects of economic growth on the environment; application of economic theory of external diseconomies, cost-benefit analysis, program budgeting, and welfare economics to problems of the physical environment.

Office Hours and Contact Information:

Professor: Jonathan Hughes
Office location: Economics 102
Office hours: Tuesdays and Thursdays from 11:00am-12:30pm (or by appointment)
Phone: (303) 735-0220
Email: jonathan.e.hughes@colorado.edu
Class web site: Canvas

Textbook:

Environmental Economics and Management: Theory, Policy and Applications, by Scott J. Callan and Janet M. Thomas, 2010 (6th edition). This textbook provides an excellent introduction to the economic concepts in environmental economics. In the syllabus, readings from this book will be denoted “C&T”

Attendance:

Class attendance is expected, though I will not take roll. Empirically, students’ grades are *strongly* positively correlated with attendance (and completing the course assignments). Please make every effort to attend class each day. If you do miss class, it is your responsibility to get notes and assignments from a classmate.

Grading:

10% Class participation
15% Problem sets
25% Midterm exams (2)
25% Final exam

Problem Sets:

Problem sets will be assigned weekly. These exercises are designed to reinforce the concepts covered in class and to prepare you for the midterm and final exams. Solutions to the problem sets will be posted on Canvas so that you may check your work.

Supplementary reading:

From time to time supplementary reading will be posted on the course web page. I will announce these assignments in class. Please be prepared to discuss these readings in class. Materials discussed in class will be covered on the midterm and final exams.

Examinations:

There will be two in-class mid-term exams and a final exam. The mid-term exams will be held on **Tuesday October 1, 2019** and **Tuesday November 5, 2019**. The final exam will be held on **Saturday December 14, 2019 from 1:30 – 4:00 pm**.

Grading policy:

The grade distribution will be consistent with other upper-level economics electives. You may make an appointment to discuss your grade at any point during the course. However, I will not discuss strategies to improve your grade after the final exam.

Late Assignments and Missed Examinations:

Problem sets and other assignments are due before the start of class on the date due. No late assignments will be accepted except in the case of documented medical or family emergency. No make-up exams will be given. Campus policy regarding religious observances requires that faculty make every effort to deal reasonably and fairly with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance. If you foresee a conflict, contact me as soon as possible to make alternate arrangements for you to complete the requirements of this course.

Lecture Notes: My lectures will make use of both the chalkboard and Powerpoint. The lecture slides and graphs can be downloaded from the class web site, available through Canvas. The Please visit the class website often.

Accommodation for Disabilities: If you qualify for accommodations because of a disability, please submit your accommodation letter from Disability Services to your faculty member in a timely manner so that your needs can be addressed. Disability Services determines accommodations based on documented disabilities in the academic environment. Information on requesting accommodations is located on the [Disability Services website](#). Contact Disability Services at 303-492-8671 or dsinfo@colorado.edu for further assistance. If you have a temporary medical condition or injury, see [Temporary Medical Conditions](#) under the Students tab on the Disability Services website.

Classroom Behavior: Students and faculty each have responsibility for maintaining an appropriate learning environment. Those who fail to adhere to such behavioral standards may be subject to discipline. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with race, color, national origin, sex, pregnancy, age, disability, creed, religion, sexual orientation, gender identity, gender expression, veteran status, political

affiliation or political philosophy. Class rosters are provided to the instructor with the student's legal name. I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the semester so that I may make appropriate changes to my records. For more information, see the policies on [classroom behavior](#) and the [Student Code of Conduct](#).

Honor Code: All students enrolled in a University of Colorado Boulder course are responsible for knowing and adhering to the Honor Code. Violations of the policy may include: plagiarism, cheating, fabrication, lying, bribery, threat, unauthorized access to academic materials, clicker fraud, submitting the same or similar work in more than one course without permission from all course instructors involved, and aiding academic dishonesty. All incidents of academic misconduct will be reported to the Honor Code (honor@colorado.edu); 303-492-5550). Students who are found responsible for violating the academic integrity policy will be subject to nonacademic sanctions from the Honor Code as well as academic sanctions from the faculty member. Additional information regarding the Honor Code academic integrity policy can be found at the [Honor Code Office website](#).

Sexual Misconduct, Discrimination, Harassment and/or Related Retaliation: The University of Colorado Boulder (CU Boulder) is committed to fostering a positive and welcoming learning, working, and living environment. CU Boulder will not tolerate acts of sexual misconduct (including sexual assault, exploitation, harassment, dating or domestic violence, and stalking), discrimination, and harassment by members of our community. Individuals who believe they have been subject to misconduct or retaliatory actions for reporting a concern should contact the Office of Institutional Equity and Compliance (OIEC) at 303-492-2127 or cureport@colorado.edu. Information about the OIEC, university policies, [anonymous reporting](#), and the campus resources can be found on the [OIEC website](#). Please know that faculty and instructors have a responsibility to inform OIEC when made aware of incidents of sexual misconduct, discrimination, harassment and/or related retaliation, to ensure that individuals impacted receive information about options for reporting and support resources.

Tentative Course Outline:

Week 1: The role of economics in environmental management

August 27. Introduction - course goals, how economists view the environment

August 29. **Chapter 1 C&T** – The role of economics in environmental management

Week 2: Modeling the market process

September 3. **Chapter 2 in C&T** – Market demand, market supply, market equilibrium

September 5. Efficiency and welfare measures.

Week 3: Modeling market failure

September 10. **Chapter 3 in C&T** – Public goods and externalities

September 12. Absence of property rights, Coase Theorem

Week 4: Modeling solutions to environmental problems

September 17. **Chapter 4 in C&T** – Command and control approach

September 19. Efficiency and cost-effectiveness of the command and control approach

Week 5: Modeling solutions to environmental problems

September 24. **Chapter 5 in C&T** – Market based approaches

September 26. Pollution charges, subsidies, pollution permit trading systems

Week 6: Analytical tools for environmental planning

October 1. **Midterm**

October 3. **Chapter 6 in C&T** – Environmental risk analysis

Week 7: Analytical tools for environmental planning

October 8. **Chapter 7 in C&T** – Measuring environmental benefits

October 10. Contingent valuation, averting behavior, travel cost, hedonic price methods

Week 8: Analytical tools for environmental planning

October 15. **Chapter 8 in C&T** – Measuring (abatement) costs

October 17. Engineering, survey, ad hoc revealed preference approaches

Week 9: Analytical tools for environmental planning

October 22. **Chapter 9 in C&T** – Benefit cost analysis (BCA)

October 24. Reservations and government use of BCA

Week 10: Applications – Air quality

October 29. **Chapter 10 in C&T** – Air quality standard setting

October 31. Evaluating U.S. air quality policy and the Clean Air Act

Week 11: Applications – Air quality

November 5. **Midterm**

November 7. **Chapter 11 in C&T** – Air quality mobile sources

Week 12: Applications – Air quality

November 12. Mobile sources continued, stationary sources

November 14. **Chapter 12 in C&T** – Air quality stationary sources

Week 13: Applications – Air quality

November 19. **Chapter 13 in C&T** – Global policy and climate change

November 21. U.S. climate change policy

Fall Break November 25 – November 29

Week 14: Applications – Water quality

December 3. **Chapter 14 in C&T** – Water quality standard setting

December 5. Evaluating U.S. Clean Water Act, oil spills

Week 15: Applications – Water quality

December 10. **Chapter 15 in C&T** – Controlling point and nonpoint source pollution

December 12. Market-based solutions to improving water quality

December 14. Final Exam 1:30pm – 4:00pm