



CLASS SESSIONS

Thursday, 1st Quarter (1/23-3/6), 1:00 pm – 3:50 pm, HSC 404

INSTRUCTOR

Matthew Neidell

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600 West 168th Street, Room 609

Office Hours: Thursday, 12:00 pm – 1:00 pm

COURSE DESCRIPTION

The primary goal of environmental regulation is to protect human health, but there are a wide range of options available to policy makers and considerable disagreement over how to best implement regulation. This class focuses on understanding environmental health policy from an economic perspective. After reviewing basic economic concepts relevant for this course, we discuss an economic viewpoint of environmental issues, including when and how to intervene with markets. Since all environmental regulation requires knowledge of the threats posed by environmental exposure, we then focus on measuring the health benefits from environmental policies, recognizing we omit several important non-health benefits. We also briefly discuss the costs posed to society from environmental regulation, an important component of regulatory impact analysis often required by federal rules. We discuss the main approaches to environmental policy in the US, including incentive based approaches, such as tradable discharge permits, emission taxes and subsidies, and voluntary programs, and more traditional ‘command and control’ approaches, such as technology standards. After highlighting the strengths and weaknesses of each approach, we apply these concepts to current environmental policy on such topics as air quality, toxic and hazardous waste, climate change, and ozone depletion.

PREREQUISITES

Successful completion of P6503 (Health Economics), P8317 (Frameworks for Environmental Health Policy), or equivalent.

COURSE LEARNING OBJECTIVES

Students who successfully complete this course will be able to:

- Analyze the public health impacts of environmental policy
- Value the health impacts from environmental conditions
- Measure the costs associated with environmental cleanup
- Assess the relative strengths and weaknesses of various environmental policies

Textbook: Barry Field and Martha Field. Environmental Economics: An Introduction, 5th edition (paperback). McGraw-Hill/Irwin. Previous editions of this textbook are acceptable. Supplemental readings will be supplied as necessary.

ASSESSMENT AND GRADING POLICY

Student grades will be based on:

Class Participation.....	10%
Homework.....	30%
In-Class Debate.....	30%
Final Paper.....	30%

COURSE REQUIREMENTS

There will be three homework assignments, each worth 10% of your total grade. We will also have an in-class debate on a current environmental topic, described in more detail on courseworks. All due dates are listed below in the course schedule.

For the final paper, students will provide a brief write-up of one of the other topics debated in class, providing a critical review of both sides and summarizing your position on the topic based on their presentations. I will assign topics on the day of debate, just before each debate begins. Submit one paper per individual. The paper must be between 3-4 pages, double spaced, times new roman, font size 12, 1" margins all around. You can include up to 3 tables or figures. References and tables and figures do not count towards the page limit. The final paper is due March 13th via courseworks, and must be in PDF format.

Late policy – For homework assignments, 2 points will be deducted for each day the assignment is late. For the final paper, 1 unit (e.g. A- to B+) will be deducted for each day it is late. Note that one day = 1 minute - 24 hours late, 2 days = 24 hours 1 minute - 48 hours late, etc.

COURSE STRUCTURE

The course will be primarily lecture based with the expectation of active student participation. Given the importance of student participation, 10% of your grade will be based on constructive participation.

MAILMAN SCHOOL POLICIES AND EXPECTATIONS

Students and faculty have a shared commitment to the School's mission, values and oath.
<http://mailman.columbia.edu/about-us/school-mission/>

Academic Integrity

Students are required to adhere to the Mailman School Honor Code, available online at
<http://mailman.columbia.edu/honorcode>.

Disability Access

In order to receive disability-related academic accommodations, students must first be registered with the Office of Disability Services (ODS). Students who have, or think they may have a disability are invited to contact ODS for a confidential discussion at 212.854.2388 (V) 212.854.2378 (TTY), or by email at disability@columbia.edu. If you have already registered with ODS, please speak to your instructor to ensure that s/he has been notified of your recommended accommodations by Lillian Morales (lm31@columbia.edu), the School's liaison to the Office of Disability Services.

COURSE SCHEDULE

Session 1 – Review of economic concepts	
1/23	<u>Learning Objectives:</u> • Introduction to course (chapters 1 & 2): overview, role of incentives, history of environmental regulation, areas of environmental regulation. • Review of basic economic concepts (chapters 3 & 4): supply & demand, equilibrium, consumer & producer surplus, efficiency, externalities, taxes, subsidies.
Session 2 – Environmental quality and cost-benefit analysis	
1/30	<u>Learning Objectives:</u> • Environmental quality (chapter 5): damage functions, risk-risk tradeoffs, abatement costs, enforcement costs. • Cost-benefit analysis (chapter 6): discounting, risk analysis.
Session 3 – Valuing benefits	
2/6	<u>Learning Objectives:</u> • Valuing benefits (chapter 7): willingness to pay/contingent valuation, cost of illness, value of statistical life, QALY, hedonic price method. • Costs (chapter 8): opportunity costs, non-monetary costs, marginal costs Note: HW 1 due
Session 4 – Approaches to regulation	
2/13	<u>Learning Objectives:</u> • Decentralized policies (chapter 10): Liability laws, property rights/Coase theorem • Command and control strategies (chapter 11) • Incentive based solutions (chapters 12 & 13): emission charges/taxes, abatement subsidies, permit trading. Note: HW 2 due
Session 5 – Air quality policy	
2/20	<u>Learning Objectives:</u> • (chapter 15): CAA & NAAQS, incentive based examples (SO₂ & leaded gasoline), information/voluntary programs (Spare the Air, Smog/Ozone Alerts). Note: HW 3 due
Session 6 – Toxic substances	
2/27	<u>Learning Objectives:</u> • Toxic and hazardous substances (chapter 16): federal policies, environmental justice, information programs (TRI) Note: In-class debates
Session 7 – International issues	
3/6	<u>Learning Objectives:</u> • International Environmental Issues (chapters 19 & 20, p. 475-481): pollution havens & trade, sustainability, ozone depletion, climate change Note: In-class debates