

## **FRE 526 (1.5) Environmental Economics and Policy: Theory**

### **Course Outline**

Class Time: Tuesday, Thursday 12:30 -1:50 PM

Room: MacMillan 154

#### **Instructor**

*Sumeet Gulati*

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Office Hours: To be announced

Besides my office hours, email ([sumeet.gulati@ubc.ca](mailto:sumeet.gulati@ubc.ca)) is the best way to get in touch with me.

#### **Prerequisite**

FRE 502: Food Market Analysis

#### **Description**

In this course, we will build an analytical framework from simple economic principles. We will use it to define society's optimal pollution and preservation/exploitation of natural resources. We will then ask: can markets function effectively to protect our environment or is government policy necessary? When it comes to the environment, the market often fails. What can we do to improve it? Based on the type of resource, we will study policies to correct market failure. We will understand the realities of government intervention and how governments can do better in steering our environment.

Based on the economic framework developed, we will study in detail the economics of climate change, and marine resources.

#### **Learning Objectives**

- To understand the critical role of property rights, institutions, and incentives in environmental problems
- To analyze the impacts of the various sources of market failure in real-world environmental situations.
- To determine the relative merits of different environmental policies—market-based or other regulatory solutions—in different contexts.

#### **Class Format**

12 lectures of 1.5 hours, twice a week for 6 weeks.

## Course Requirements (Subject to changes)

Your grade shall be determined as follows

Exams and Problem Sets	Date	Percent of Grade
Midterm	To be announced.	30 percent
Best 2 from 3 Assignments	Assigned every two weeks.	30 percent
Final Exam	To be announced.	35 percent
Class Participation	Contributions to class discussions.	5 percent

### Exams

Students will take two exams: one midterm, and one final. The midterm will be held in class, lasting 80 minutes. The final exam will be comprehensive (it shall cover all material taught in class), and will last two (or more) hours. You must take exams at the scheduled times unless you have another exam at the same time, serious illness, or an emergency. You must validate with documentation the reason(s) why you will be unable to take any exam. There shall be three assignments.

### Class Participation

Your participation grade depends on your contribution to class discussions. All contribution is appreciated, even questions asking me to clarify previously taught material. The sole aim of assigning a participation grade is to encourage active learning for everyone. I will ascertain and assign this part.

### Assignments

The assignments will consist of problem sets and short essays addressing a specific question. These assignments will challenge the students to understand the economic impacts of various market failures in real-world environmental situations, the relative merits of different environmental policies - market-based or other regulatory solutions - in different contexts as well as the critical role of property rights, institutions, and incentives in addressing environmental problems

**The class twitter discussion:** Almost every day, I shall tweet links or commentary to news and blog posts via my twitter page: <https://twitter.com/sgulati>. All material I consider relevant to this course will be marked with the hashtag: #mfre. You can contribute in two ways: 1) by providing your thoughts, or links to information relevant to this course, or 2) by commenting on what I, or your classmates, tweet.

### **Academic Dishonesty**

Please review the UBC Calendar “Academic regulations” for the university policy on cheating, plagiarism, and other forms of academic dishonesty. **Academic dishonesty will be dealt with very seriously in this course.**

### **Online Course Material**

Available at Connect: <http://www.connect.ubc.ca>. You are required to regularly login to your course page for FRE 526. Your syllabus, course-lecture slides, additional material, announcements, assignments, and grades are available.

## Course Outline and Readings

How to use this course outline: This outline is a collection of papers, and topics commonly taught in the economics of the environment. Wherever possible I provide a stable link to the paper. While some of these links will work anywhere, many of them are digitally protected requiring a subscription. You can access this material by logging in through your account at the UBC library, or on any computer connected via Ethernet on the UBC network. For some articles I do not provide a link, in that case, please search for the article (if you search via the UBC library you will find access to its electronic version).

This outline is subject to change. I might add/replace material as the course proceeds.

### 1. Introduction to Environmental Economics:

- a. Fullerton, D. and R. Stavins (1998), "How do Economists Really Think About the Environment?" *Discussion paper 98-29*, Resources for the Future, <http://www.rff.org/documents/RFF-DP-98-29.pdf>.
- b. There is course material on Connect for this section, please review your course slides up to and including the set of slides titled: Mineral Economics. Students can supplement the material on Connect by reading an undergraduate level environmental textbook of their choice. One suggestion is: Keohane and Olmstead, "Markets and the Environment," Island Press, <http://www.islandpress.com/ip/books/book/islandpress/M/bo5092233.html>:
  1. Economic Efficiency.
  2. Externalities and Market Failure.
  3. Benefit-cost analysis and its relationship with efficiency.
  4. Dynamic/Intertemporal Efficiency.
  5. Mineral Economics/The Extraction of Depletable Resources.
- c. The economics of pollution control / Instrument choice in environmental policy.
  1. Material in Connect: course slides titled "The Economics of Pollution Control" and "Ambient Standards."
  2. Lawrence H. Goulder and Ian W. H. Parry (2008), "Instrument Choice in Environmental Policy," *Rev Environ Econ Policy* 2(2): 152-174 doi:10.1093/reep/ren005. Available online at <http://reep.oxfordjournals.org/content/2/2/152.abstract>.

### 2. Marine Resources/Open Access Resources.

- a. Course Material on Connect.
- b. Brown G. (2000) "Renewable natural resource management and use without markets", *Journal of Economic Literature*, 38, 875-914.

#### Economics of Fisheries

- c. Conrad, J.M. (1995), "Bioeconomic models of the fishery", *Handbook of Environmental Economics*, (D. Bromley, ed.) Oxford, Blackwell, 405-432

#### Policy Problems

- d. Turner M.A., (1997), “Quota-induced discarding in heterogeneous fisheries”  
*Journal of Environmental Economics and Management*, 33, 186-195
3. The Economics of Climate Change.
- a. Some basic issues: Class material on Connect.
- b. Symposium: The Economics of Climate Change: The Stern Review and Its Critics. This is a symposium of four papers online at: <http://reep.oxfordjournals.org/content/2/1.toc>. Individual papers are:
1. Robert Mendelsohn (2008), “Is the *Stern Review* an Economic Analysis?”  
*Rev Environ Econ Policy* 2(1): 45-60 doi:10.1093/reep/rem023
  2. Thomas Sterner and U. Martin Persson (2008), “An Even Sterner Review: Introducing Relative Prices into the Discounting Debate,” *Rev Environ Econ Policy*, 2(1): 61-76 doi:10.1093/reep/rem024.
  3. John P. Weyant (2008), “A Critique of the *Stern Review's* Mitigation Cost Analyses and Integrated Assessment,” *Rev Environ Econ Policy* 2(1): 77-93 doi:10.1093/reep/rem022.
  4. Simon Dietz and Nicholas Stern (2008), “Why Economic Analysis Supports Strong Action on Climate Change: A Response to the *Stern Review's* Critics,” *Rev Environ Econ Policy* 2(1): 94-113 doi:10.1093/reep/rem001.

**Tentative Lecture Schedule (to be finalized).**

1.	Tue, January 6 <sup>th</sup> , 2015	Introduction	Assignment 1 given
2.	Thurs, January 8 <sup>th</sup> , 2015	Introduction	
3.	Tues, January 13 <sup>th</sup> , 2015	Introduction	Assignment 1 due
4.	Thurs January 15 <sup>th</sup> , 2015	Economics of Pollution Control	Assignment 2 given
5.	Tues, January 20 <sup>th</sup> , 2015	Economics of Pollution Control	Assignment 2 due
6.	Thurs, January 22 <sup>nd</sup> , 2015	Midterm	
7.	Tues, January 27 <sup>th</sup> , 2015	Marine Resources	
8.	Thur January 29 <sup>th</sup> , 2015	Marine Resources	Assignment 3 given
9.	Tues, February 3 <sup>rd</sup> , 2015	Climate Change	
10.	Thurs, February 5 <sup>th</sup> , 2015	Climate Change	Assignment 3 due
11.	Tues, February 10 <sup>th</sup> , 2015	Climate Change	
12.	Thurs, February 12 <sup>th</sup> , 2015	Summary and Recap.	