

Basic class info

Environmental Economics - Econ 4430 - Fall 2016

Class location: Monroe 124

Instructor: Bill Shobe

Teaching assistant: Xintian Wang (xw2nj@virginia.edu)

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Phone: 434.982.5376

Office: L042 Garrett Hall

Office hours: M-W, 1 pm - 2 pm; let me know you are stopping by to make sure I don't go AWOL.

Other times: By appointment; often I am at my office at 2400 Old Ivy Rd. (A map is [here](#).)

Course objectives

The core theme of this class is to view environmental problems as a failure of ownership and control. The class will explore how environmental problems arise in an exchange economy when standard assumptions about the ownership and control of endowments are violated. We will explore when contracting over rights can be expected to correct these problems and when it may not be expected to do so. We examine mechanisms for correcting misallocations of resources due to the failure of ownership and control to match the assumptions in the classic micro model. This will include examination of regulations, taxes, subsidies, and trading regimes. In the second half of the class, we study the allocation of renewable and non-renewable natural resources over time. We give special attention to how capital markets allocate resources across time and when we may or may not expect this intertemporal allocation to be satisfactory. Finally, we will bring all of the elements together in a discussion of global warming and of global sustainability more generally.

Readings

Required text: Environmental Economics: An Introduction (7th Ed.); Barry Field and Martha Field; McGraw Hill, 2016.

Readings: there will be additional readings for each class posted on the class activities page.

Prerequisites

This is an upper-level economics class. It is assumed that you know or can learn as needed the core ideas from intermediate microeconomics texts. While I do not enforce the prerequisites, I will expect you to be able to use many key ideas from intermediate microeconomics in this class. This class does not explicitly use calculus, but important ideas from calculus are used throughout the term. In the past, non-economics majors have been able to hold their own in this class as long as they are willing to learn some microeconomic principles as we move through the material.

Honor Policy

The U.Va. honor code will be strictly enforced. You have the responsibility of submitting only your own work as your own, and I have the responsibility of trusting you when you pledge your work. All written work handed in to me is considered to be pledged, but please pledge it anyway. Please pledge any documentation that you provide for special arrangements on graded work.

Special Accommodations

If you need special accommodations for any class requirements, you must contact me as soon as you reasonably can. Serious illness or death within the student's close community, religious holidays, and participation in field trips and athletic contests are all permissible reasons for rescheduling an in-class test. You have the obligation ahead of time to make the necessary arrangements for make-ups. Your reasons must be in writing (which includes email) and should be pledged. Otherwise, no make-ups will be allowed.

A special word about the final exam. The final exam will be held on Monday, December 9, 2016 from 2 PM to 5 PM. I will **not** allow students to reschedule the final for the purposes of arranging convenient holiday travel. Period. If you need to arrange your holiday travel in a way that conflicts with the final, then you need choose a class that does not disrupt your holiday plans.

Course Format

There will be two classes per week: Mondays and Wednesdays at 3:30 PM in Monroe 130. Class attendance is not required. However, in the past, those who did not attend class regularly tended to do poorly in the course.

Please sign up for a discussion section. These will meet on a somewhat regular basis throughout the term.

Three of the discussion sections will be dedicated to tests, so you must make sure that these dates are clear so that you can attend discussions on those days.

Electronics

I request that you refrain from using cell phone, laptops, or tablet computers during class. It is just too much of a distraction for all concerned.

Office Hours

Please let me know if you are planning to come by so that we can reschedule, if I have a conflict. I will generally be available by appointment at almost any reasonable time. On Thursdays and Fridays (and assorted other times), I will be in my office at the Weldon Cooper Center, which is at 2400 Old Ivy Rd., a 15 minute walk from Central Grounds. (A map is [here](#).)

Grading

The average and median grades for this class in the last few years has been around 87. Letter grades for the course will be assigned as follows:

A+	98+
A	94+
A-	90+
B+	88+
B	84+
B-	80+
C+	78+
C	74+
C-	70+
D	60+
F	Otherwise

There will be a short paper (3-4 pages due 9/28) for 12%, three tests (during the discussion section), and a final exam. Each of the in-class tests (dates: 9/19, 10/17, 11/14) will count for 18% of your grade, and the final (Dec. 9) will count for 34%. **The final will be fully comprehensive.**

DRAFT - Course Description (for SIS)

Schedule of Topics & Activities

Class	Topics	Activities
1 (8/24)	Resources, exchange, and the social optimum: where we review microeconomics in a way that will prove useful.	<p>Reading: F&F, Chs 1 and 2</p> <p>Discussion:</p> <p>Assignment:</p>
2 (8/29)	Property rights and markets	<p>Reading: F&F, Ch. 3 Bergstrom. and Randall, Rules of the Game Dales, The Property Interface</p> <p>Discussion:</p> <p>Assignment: Problem Set #1</p>
3 (8/31)	"Externalities", public goods, and common property	<p>Reading: F&F, Ch. 4 Hardin, The Tragedy of the Commons</p> <p>TBA</p> <p>Discussion:</p> <p>Assignment: Problem set #2</p> <p>Assessment:</p>
4 (9/5)	Bargaining and opportunity cost; Ronald Coase, who was here at UVA when he wrote this article, won the Nobel Prize. This article takes you to the foundations of microeconomic analysis. It is a difficult article. <i>Read it carefully. Read it more than once. [It is OK to skip section VII.]</i>	<p>Reading: Coase, The Problem of Social Cost</p> <p>Discussion:</p> <p>Assignment:</p> <p>Assessment:</p>
5 (9/7)	- ditto -	<p>Reading: Cooter & Ulen, An Economic Theory of Property</p> <p>Discussion:</p> <p>Assignment:</p> <p>Assessment:</p>
6 (9/12)	- ditto -	<p>Reading: Cole, Pollution & Property, Ch. 1 & 2</p> <p>Discussion:</p> <p>Assignment: Problem Set #3</p> <p>Assessment:</p>
7	Controlling pollution: Introduction	

<p>(9/14)</p>		<p>Reading: F&F, Ch. 5, 9, 10</p> <p>Ruff, The Economic Common Sense of Pollution</p> <p>Discussion:</p> <p>Assignment:</p> <p>Assessment:</p>
<p>8 (9/19)</p>	<p>Incentives: Pigouvian taxes, subsidies for emission reduction, and other incentives</p> <hr/> <p style="text-align: center;">-- First Test --</p> <p style="text-align: center;">During discussion section</p>	<p>Reading: F&F, Ch. 11, 12</p> <p>Discussion:</p> <p>Assignment:</p> <p>Assessment: Test #1</p>
<p>9 (9/21)</p>	<p>-- TBA --</p>	<p>Reading: Catch up.</p> <p>Discussion: No discussion sessions today!</p> <p>Assignment:</p> <p>Assessment:</p>
<p>10 (9/26)</p>	<p>Tradable emission allowances</p>	<p>Reading: F&F, Ch. 13</p> <p>Discussion:</p> <p>Assignment:</p> <p>Assessment:</p>
<p>11 (9/28)</p>	<p>-- TBA--</p>	<p>Reading: No readings</p> <p>Discussion:</p> <p>Assignment: Property rights paper due today.</p> <p>Assessment:</p>
<p>12 (10/5)</p>	<p>More on pollution control instruments</p>	<p>Reading: Perman et al, Chapter 7, part 1</p> <p>Perman et al., Ch. 6, all</p> <p>The first of these two readings is from an older version of the textbook. For most of you, just sticking with the second reading is best, but you may skip the text in section 6.5. If you had already read the Ch. 7 (older) version, then you can just skip that part of the newer version. The are very similar.</p> <p>Discussion:</p>

		Assignment: Assessment:
13 (10/10)	Instrument choice and implementation; the double dividend and other fascinating complications	Reading: Perman et al, Chapter 6, all. Optional but probably helpful: CBO, Managing Allowance Prices in a Cap and Trade Program. Discussion: Market instruments Assignment: Assessment:
14 (10/12)	Environmental federalism	Reading: Oates, A Reconsideration of Environmental Federalism Shobe & Burtraw, Rethinking Environmental Federalism in a Warming World Discussion: Assignment: Assessment:
15 (10/17)	<p style="text-align: center;">-- Second Test --</p> <p style="text-align: center;">During discussion section</p>	Reading: Discussion: Test #2 Assignment: Assessment:
16 (10/19)	Finish up with environmental federalism	Reading: Discussion: Assignment:
17 (10/24)	Intro to the economics of natural resources	Reading: Harris, Chapter 12 Discussion: Assignment: Assessment:
18 (10/26)	Non-renewable natural resources	Reading: Hanley, Shogren & White - Chapter 13 Discussion: Assignment: Assessment:

<p>19 (10/31)</p>	<p>More on non-renewable resources</p>	<p>Reading: Stiglitz, A Neoclassical Analysis of the Economics of the Economics of Exhaustible Resources</p> <p>Solow, The Economics of Resources or the Resources of Economics</p> <p>Discussion:</p> <p>Assignment:</p> <p>Assessment:</p>
<p>20 (11/2)</p>		<p>Reading:</p> <p>Discussion:</p> <p>Assignment:</p> <p>Assessment:</p>
<p>21 (11/7)</p>	<p>-- TBA --</p>	<p>Reading: TBA</p> <p>Discussion:</p> <p>Assignment:</p> <p>Assessment:</p>
<p>22 (11/9)</p>	<p>Renewable resources: fisheries</p>	<p>Reading: Turner & Pearce, Ch. 6</p> <p>Field, Ch. 13</p> <p>Discussion:</p> <p>Assignment:</p> <p>Assessment:</p>
<p>23 (11/14)</p>	<p>More on renewable resources: forest, and water resources; biodiversity</p> <p style="text-align: center;">-- Third Test --</p> <p style="text-align: center;">During discussion section</p>	<p>Reading: Field, Chapters 12: Forests</p> <p>15: Water and</p> <p>19: Biodiversity</p> <p>Discussion:</p> <p>Assignment:</p> <p>Assessment: Test #3</p>
<p>24 (11/16)</p>	<p>Sustainability</p>	<p>Reading: Goodstein ch 6 and ch 7</p> <p>Discussion:</p> <p>Assignment:</p> <p>Assessment:</p>
<p>25</p>	<p>More on sustainability; biodiversity, ecosystem</p>	<p>Reading: Bergstrom and Randall ch 19</p>

<p>(11/21)</p>	<p>services, and ecological economics</p>	<p>Solow, Sustainability: An economist's perspective</p> <p>Also, you would profit from reading the very nice article by Heal, but I will not make it a required reading.</p> <p>Discussion: Assignment: Assessment:</p>
<p>26 (11/28)</p>	<p>Intro to climate change and climate change economics</p>	<p>Reading: For background, you might read:</p> <p>Understanding and Responding to Climate Change, National Academies of Science</p> <p>and</p> <p>CBO Primer on the Economics of Climate Change</p> <p>Discussion: Assignment: Assessment:</p>
<p>27 (11/30)</p>	<p>Climate change</p>	<p>Reading: Readings from:</p> <p>Nordhaus, The Climate Casino</p> <p>Discussion: Assignment: Assessment:</p>
<p>28 (12/5)</p>	<p>Climate change & Summing up</p>	<p>Reading: Discussion: Assignment: Assessment:</p>
<p>Final (12/9)</p>	<p>-- Final exam --</p>	<p>Reading: Everything! Discussion: Assignment: Assessment:</p>

