

Text: Teitenberg and Lewis, Environmental Economics and Policy, 6th ed.

### Syllabus

Week	Dates	Text Reading	Discussion Questions <sup>1</sup>	Clayco Problems <sup>2</sup>
1	Aug. 25 – 9	Chap. 1 Chap. 2	1,3 1	1
2	Sept 1 - 5	Chap. 3	2,3	
3	Sept 8 - 12	Chap. 4 Chap. 5	1,2	2
4	Sept 15 – 19	Chap. 5 Chap. 6	1 1,2	3 4
5	Sept 22 – 26	Exam Chap. 7	1,2,3	
6	Sept 29 – Oct 3	Chap. 8	1,2,3	
7	Oct 6 - 10	Chap. 9	1,3	5
8	Oct 15 - 17 (Fall Break)	Chap. 11	1,2	
9	Oct 20 - 24	Chap. 12 Chap. 13	1,2 1	
10	Oct 27 - 31	Exam Chap. 14	1	
11	Nov 3- 7	Chap. 15 Chap. 16 <sup>3</sup>	1,2	
12	Nov 10 - 14	Chap. 16 Chap. 17	1,2 1,2,3	
13	Nov 17 - 21	Chap. 18	1,2	

<sup>1</sup> Discussion questions are found at the end of each chapter. Give some thought to these after you read the chapter and be prepared to discuss them in class. This will be a good way to improve your class participation score.

<sup>2</sup> Clayco problems are found later in the syllabus. Do them following lecture when assigned.

<sup>3</sup> Recall that on day 1 I gave you a copy of T&L's most recently revised climate chapter.

14	Nov 24 – 25 (Thanksgiving)	Chap. 19	1,2,3,4,5,6,7
15	Dec 1- 5	Chap. 10 Chap. 20 Handouts as time allows	1,2 1,2

Grade Weights for students who aren't economics/business administration majors or economics/business administration majors or ones who are but don't want the course to count toward the economics/business administration major:

First and Second Exams	25% each
Final	30%
Class Participation and Hand-in Work	15%
Small paper	5%

Grade Weights for economics/business administration majors who want the course to count toward the major:

First and Second Exams	20% each
Final	25%
Class Participation and Hand-in Work	15%
Large paper	20%

Papers:

Every student has to do at least a small paper that uses at least one of the following references. Most of them pertain to global warming, but you can also write on shale gas and oil and the very recent growth of "fracking". A small paper should be about 5 typewritten pages and can be on any topic that uses some part of this material. Other references may be used to argue against the views in this literature, but the topic must be centered on something within these sources and must draw substantially on one of these sources.

A large paper must be 15 pages long and come primarily from these sources. Your goal is to demonstrate a higher level of sophistication than we usually have in this principles level course. You will probably want to discuss several issues. This option is made so you can use this course to count as an upper level econ course in the major. Maybe you don't need it for a basic major, but it may get you a dual or double major. Discuss the option with me if you like or decide on your own. Students who do the large paper will get an email from me (copied to Dr's. Olsh and Seidel) to prove that they earned the upper level credit. Note that this paper counts as 20% of your grade so do a good job on it.

Global warming sources for the papers:

Nordhaus, William, “A Review of the Stern Review on the Economics of Climate Change,” *Journal of Economic Literature*, Sept., 2007, pp. 686-702

Weitzman, Martin, “A Review of the Stern Review on the Economics of Climate Change,” *Journal of Economic Literature*, Sept., 2007, pp. 703-724

Aldy, Joseph, Krupnick, Alan, Newell, Richard, Parry, Ian and Pizer, William, “Designing Climate Mitigation Policy,” *Journal of Economic Literature*, Dec., 2010, pp. 903-34.

These are fairly highly reading level, but excellent sources to see the economics of climate change. The first two papers are from leading economists. The later one is from a group who are or were all at Resources for the Future.

Lomborg, Bjorn, *The Skeptical Environmentalist: Measuring the Real State of the World*, Cambridge U Press, 2004. A short [up-to-date web page](http://www.project-syndicate.org/commentary/bj-rn-lomborg-says-that-the-un-climate-panel-s-latest-report-tells-a-story-that-politicians-would-prefer-to-ignore?mc_cid=82ddb9fe5d&mc_eid=39ae5d76b8) (http://www.project-syndicate.org/commentary/bj-rn-lomborg-says-that-the-un-climate-panel-s-latest-report-tells-a-story-that-politicians-would-prefer-to-ignore?mc\_cid=82ddb9fe5d&mc\_eid=39ae5d76b8)

This is the prolific nonalarmist. The modern day Julian Simon. He is not technical or an economist, but he expresses the issues in a readable manner.

Stern, Nicholas, *The Economics of Climate Change: The Stern Review*, Cambridge U Press, 2007

You can use this source if you want to. It caters to the alarmist camp.

Kyoto and Beyond: Alternative Approaches to Global Warming

There are four papers here focused on Kyoto by Barrett, Pizer, Nordhaus and Olmstead and Stavins. They precede the Stern Review. Look in the *American Economic Review, Papers and Proceedings*, 2006

Climate Change

There are three papers here that focus on market-based policies, economic effects and technology by Metcalf, Tol and Barrett in the *Journal of Economic Perspectives*, Spring 2009

Nordhaus, *A Question of Balance*, Yale University Press, 2008.

Here's Nordhaus's book on global warming, written for the general public.

Shale gas and fracking sources

[Shale gas—the unfolding story](#), Oxford Review of Economic Policy, Volume 27, Number 1, 2011, pp. 117–143, (on my part of the Mcdaniel page)

[EPA Hydraulic Fracturing Study Plan](#) November 2011, EPA/600/R-11/122 November 2011 (on my part of the Mcdaniel page)

or the updated version: <http://www2.epa.gov/sites/production/files/documents/hf-report20121214.pdf>

You can use sources other than these, but your paper must center around at least one major issue that you take from one of these sources. If you want to write a 15 page paper on shale resources and fracking, you will have to find a number of sources on your own. To be more than descriptive, they will have to come from economics

journals, not from newspapers or magazines or web sites. Government web sites can be good, but they are not like refereed journals.

### Clayco Problems

1) a) Given the values for L and Q in the table below and with the  $P_L = \$2$ , copy and complete the table giving the  $MP_L$ , VC, MC and AVC. Put values between the lines when they belong there and on the lines when they belong there.

b) Draw well-labeled careful diagrams of the functions. One for  $MP_L$ . One for VC. And one for MC and AVC together.

L	Q	$MP_L$	VC.	MC	AVC
0	0				
1	2				
2	5				
3	9				
4	12				
5	14				
6	15				
8	16				

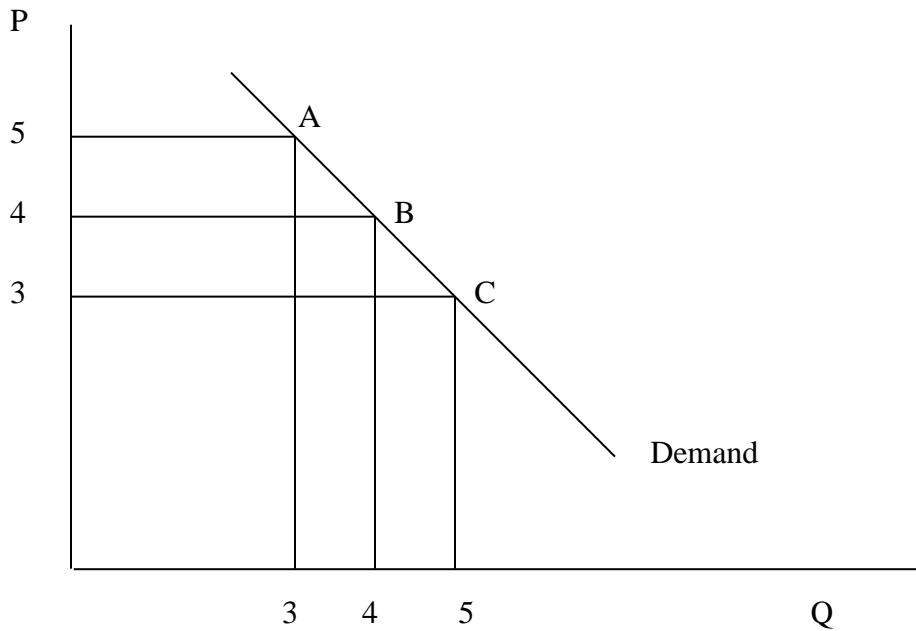
2) Use the demand diagram below.

a) Find TR at points A, B and C

b) Find MR between points A, B and C

c) Draw a diagram like the one below and carefully add points for your MR values.

d) If MC is constant at \$2, which point is most profitable? Why?



3) Suppose we consume good X with the following net benefit function.

$$NB = 20 - X$$

a) If there are limitless resources to make X, what is the optimal quantity of to have? And what is the total NB?

b) Now suppose that X is consumed in two consecutive years and there are still limitless resources and a zero discount rate. What is the optimal quantity of to have? And what is the total NB?

c) Now suppose that resources are limited such that only 20 X can be produced over the two years ( $X_1 + X_2 = 20$ ). How should the consumption of X be divided over the two years and what is the total net benefit. (The discount rate is still zero.)

d) Now to see the importance of the discount rate, let's assume it's .05, a reasonable value, but that the second year comes in year 10. To simplify assume that all consumption is at the very beginning of the year so year one's value is not discounted at all. Year ten's value is nine years away from the present. As in part c, find the amounts of X to consume in each year and the present value of the NB.

4) Go to the web site for UNFPA described on p 125 of the text. Print one page of anything that you find of interest and relevance to the course and write a brief description of what you've found and why it's relevant.

5) Go to the web site for Surf Your Watershed described on p 197 of the text. Print one page of anything that you find of interest and relevance to the course and write a brief description of what you've found and why it's relevant.