

ENV-635 Energy Economics and Policy
T/Th 1:25-2:40
Field Auditorium
Fall 2017

Professor Lori Snyder Benneer

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Office Hours:



This course has achieved Duke's Green Classroom Certification. The certification indicates that the faculty member teaching this course has taken significant steps to green the delivery of this course. Your faculty member has completed a checklist indicating their common practices in areas of this course that have an environmental impact, such as paper and energy consumption. Some common practices implemented by faculty to reduce the environmental impact of their course include allowing electronic submission of assignments, providing online readings and turning off lights and electronics in the classroom when they are not in use. The eco-friendly aspects of course delivery may vary by faculty, by course and throughout the semester. Learn more at <http://sustainability.duke.edu/action/certifications/classroom/index.php>

Teaching Assistant:

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TA Office Hours: TBA

Nature and Purpose of the Course

Prerequisites:

Students are required to have taken ENV520—Environmental and Resource Economics I (or equivalent). ENV520 is taught in the first half of the fall semester in the same time slot as ENV635. Mastery of the material in ENV520 is essential for success in ENV635.

Required Readings:

There are two required books for the course. Throughout the syllabus these readings will be abbreviated as KO and VHV.

KO: Keohane, Nathaniel O. and Sheila M. Olmstead. *Markets and the Environment* (Washington, D.C.: Island Press, 2007).

VHV: Viscusi, Kip W., Joseph E. Harrington, Jr., and John M. Vernon. *Economics of Regulation and Antitrust*. (Cambridge, MA: The MIT Press).

In addition, there are several articles or handouts that will be available either through E-Reserves or on Blackboard. These articles are marked with an asterisk (*).

Problem Sets

There will be three problem sets. All problem sets are at the beginning of class on the date assigned in the syllabus. Problem sets should be written out neatly (math is easier to write out rather than type) or printed out. Late problem sets must be scanned and submitted by email to the Head TA. Late work will be marked down 10% for every day (or part of a day) that they are late. The time stamp on the email will serve as the official time of submission for late problem sets.

The problem sets will be quantitative in nature involving algebra, calculus, and using Excel to do more complicated calculations. I encourage you to work in your study groups on these problem sets and help each other learn. However, each student **must submit his or her own copy of the assignment and you are not allowed to directly copy another student's work. You may NOT use any materials from prior offerings of this course to assist you in completing your assignments.**

An example of appropriate problem set collaboration would be for Student A to explain the calculus used in the problem to Student B. Then Student B goes off on his own and completes the problem again and writes up his own explanation. It would be inappropriate for Student B to directly copy the math or the explanation/interpretation directly from Student A.

In my experience, study groups are most effective when everyone attempts to do the problem sets BEFORE meeting as a group. Only if you really try to solve the problem on your own will you realize whether you understand the problem and its solution. It is very easy to hear someone's explanation and think you understand the problem, but on the exams you will not have the benefit of your study group so get in the habit of completing the first round of the problem sets on your own. This will also help insure that you are using the study group in ways that are consistent with the Nicholas School Honor Code. **All potential violations of the honor code will be reported to the Director of Professional Studies for adjudication.**

Quizzes and Exams

There will be two quizzes and one exam. Quizzes will take place during the first 15 minutes of class on Oct. 31 and Nov. 14. The exam will take the entire class on Nov. 30. Quizzes and exams are closed book/note. You may bring a calculator. You will not need blue books.

Grading

Grades will be computed as follows:

3 Problem Sets	30% (10% each)
2 Quizzes	20% (10% each)
Exam	50%

Letter Grades will be assigned based on weighted grade in the course using the following base schedule:

A+	$\geq 98\%$
A	94-97
A-	90-93
B+	87-89
B	83-86
B-	80-82
C+	77-79
C	73-76
C-	70-72
F	< 70

Professor Bennear reserves the right to curve grades, based on difficulty of the exams/quizzes in a particular year, but curves will only serve to improve letter grades relative to the above base schedule.

Short-Term and Long-Term Illness

You do not need to notify me if you are ill and will miss one class. All classes are recorded with Panopto and you can view missed classes on the Sakai site. Professor Bennear will not meet with students to go over material missed in class. You are expected to watch the missed lectures and get notes from other students to make up missed classes.

Remember that if you are sick Duke asks that you refrain from attending classes so that illness spreads less rapidly. If you have a fever of greater than 100 degrees Fahrenheit, please do not attend class until you have been free of fever for 24 hours.

If you are ill and cannot complete an assignment on-time, please email me BEFORE the assignment is due.

If you are ill on exam day, please email Prof. Bennear before the beginning of the exam to make arrangements.

Nicholas School Honor Code

All activities of Nicholas School students, including those in this course, are governed by the Duke Community Standard:

The Duke Community Standard

Duke University is a community of scholars and learners, committed to the principles of honesty, trustworthiness, fairness, and respect for others. Students share with faculty and staff the responsibility for promoting a climate of integrity. As citizens of this community, students are expected to adhere to these fundamental values at all times, in both their academic and non-academic endeavors.

The Pledge

Students affirm their commitment to uphold the values of the Duke University community by signing a pledge that states:

1. I will not lie, cheat, or steal in my academic endeavors, nor will I accept the actions of those who do.
2. I will conduct myself responsibly and honorably in all my activities as a Duke student.

Course Topics, Readings, and Assignments Schedule (will be updated as course progresses)

Required readings are indicated with an asterisk and should be completed before the class on which they are listed. Other readings offer supplementary material and/or an alternative presentation of similar information. Readings are available on Sakai unless indicated otherwise.

WEEK 1:

October 12: Energy Economics and Policy Overview

WEEK 2:

October 17: Allocation of Non-renewable Resources I

Required Readings:

VHV: Chapter 18, pages 652-657.

October 19: Allocation of Non-renewable Resources II

Required Readings:

Livernois, John. 2009. "On the Empirical Significance of the Hotelling Rule," *Review of Environmental Economics and Policy*. 3(1): 22-41.

WEEK 3:

October 24: Price Controls and Power in Petroleum Markets

Required Readings:

VHV: Chapter 18 pp. 641-670.

Optional Readings:

Resources Magazine three articles on oil policy, 2014.

October 26: Oil and Energy Security/Independence

Problem Set #1 Due

Required Readings:

*Levi, Michael A. 2010. *Energy Security: An Agenda for Research*. Washington, DC: Council on Foreign Relations

*Parry, Ian W.H. and J.W. Anderson. 2005. Petroleum: Energy Independence is Unrealistic. *Resources* 156:11-15.

*Brown, Stephen A. and Huntington, Hillard G. 2010. *Reassessing the Oil Security*

Premium. Discussion Paper 10-05. Washington, DC: Resources for the Future.
(<http://www.rff.org/RFF/Documents/RFF-DP-10-05.pdf>)

WEEK 4:

October 31: Mobile Sources--Automobiles

Quiz #1 (covers materials from Oct 12-26)

Required Readings:

Anderson, Soren, Ian W. H. Perry, James M. Sallee, and Carolyn Fisher. 2011. "Automobile Fuel Economy Standards: Impacts, Efficiency, and Alternatives," *Review of Environmental Economics and Policy* 5(1): 89-108.

Knittel, Christopher R. 2012. "Reducing Petroleum Consumption from Transportation," *Journal of Economic Perspectives* 26(1): 93-118.

November 2: Economics of Transportation Regulation—Trucks, Trains, Airplanes and Uber

Required Readings:

VHV: Chapter 17

WEEK 5:

November 7: Natural Monopoly

Required Readings:

VHV: Chapters 11 and 12.

November 9: Electricity Market Reform and Restructuring

Problem Set #2 Due

Required Readings:

EIA. 2000. *The Restructuring of the Electric Power Industry: A Capsule of Issues and Events*. Washington, DC: EIA.

EIA. 2000. *The Changing Structure of the Electric Power Industry 2000: An Update*. Washington, DC: EIA.

WEEK 6:

November 14: History and Future of Coal

Quiz #2 (Covers Material from Nov 3-10)

Required Readings:

November 16: Natural Gas

Required Readings:

VHV: Chapter 18, pp. 671-686.

WEEK 7:

November 21: Renewables—Wind and Solar

Required Readings:

THANKSGIVING BREAK

WEEK 8:

November 28: Energy Efficiency

Problem Set #3 Due

Required Readings:

November 30: Hourly Exam

Required Readings: