

ECONOMICS 132 – FALL 2007
ENERGY ECONOMICS

Instructor:	Genevieve Peters
Office:	Economics Building 110B
Office Hours:	Tues. 11:00 a.m. – 2:00 p.m.
Office Phone:	(858) 534-7974
Email:	send2gpeters@cox.net
Classroom:	Center Hall 109
Class Time:	MWF 4:00 – 4:50 p.m.
Class Web Page:	http://webct.ucsd.edu/

COURSE DESCRIPTION

Each and every day, you are an energy consumer. Maybe your morning shower is heated by natural gas. The milk for your cereal is kept cold in your electric refrigerator. The car or bus you use to get to school probably requires gasoline.

In this class you will be introduced to the way that economists view energy choices by examining some of the more pressing energy issues faced by nations around the world. In particular, we will discuss recent trends in energy production and consumption, the issue of energy scarcity, the importance of energy for economic development, and the reform of electricity markets.

PREREQUISITES

Econ 1A-B or Econ 2 or Econ 100A and Math 10C or Math 20C.

COURSE READINGS

Required readings (listed below) have been provided on the course website. The pace of the discussion will be rapid, so you are strongly encouraged to read the required materials ahead of each lecture.

ATTENDANCE

Class attendance is an individual student responsibility. Although daily attendance is not recorded, the lectures will cover more material than the readings, and I will frequently provide analysis during lectures that doesn't appear in the readings but will be fair game for examination. Thus frequent absences may adversely affect your performance in this course.

STATEMENT OF ACADEMIC INTEGRITY

Students are expected to do their own work, as outlined in the UCSD policy on Academic Integrity published in the UCSD General Catalog. Cheating will not be tolerated, and any student who engages in suspicious conduct will be confronted and subjected to the disciplinary process. Students found guilty of academic misconduct will receive a failing grade on the exam and/or in the entire course. They may also be suspended from UCSD.

ECONOMICS 132 – FALL 2007
ENERGY ECONOMICS

EXAMINATIONS

Two midterm exams and one final exam will be given in this section.

- The midterms will be given during class time on **Friday October 19th** and **Friday November 9th**.
- The final exam will be given on **Saturday December 15th**, from **3:00 p.m. – 5:00 p.m.**

No notes, books, calculators, or other personal electronic devices will be allowed in these exams.

All three exams must be taken at the scheduled time and place. Students who arrive late will not receive extra time to complete their exam. Once a student completes the exam and leaves the exam room, no other student will be permitted to start the exam.

MISSED EXAMINATIONS

No make-up exams will be given in this class. Students who miss the midterm exam without a university accepted excuse will receive a grade of zero (0) for that exam. Students who miss the midterm with a university accepted excuse will have the weight of the final exam increased accordingly. You must take the final exam to receive a grade in this course.

Excuses for missed exams must be **pre-approved** by the instructor (except when this is not possible in an emergency situation). Students who make initial contact after the exam will have to document why they could not make contact prior to the exam. In addition, any student who misses an exam due to physical illness will be required to provide documentation from a health care professional indicating why the student was physically unable to take the exam. All documentation and an additional signed written statement explaining the relevant circumstances of the absence must be provided to the instructor within two working days of the student's return to campus. Failure to comply with any of the above in the specified manner will result in a grade of zero (0) for the exam.

GRADING

Your raw numerical score will be determined as follows:

Midterm Exam 1	=	20%
Midterm Exam 2	=	30%
<u>Final Exam</u>	=	<u>50%</u>
Total Raw Score	=	100%

Your final letter grade will be determined by the distribution of raw numerical scores in the class.

IMPORTANT DATES

Friday, October 19 th	Midterm Exam 1 (In class)
Friday, November 9 th	Midterm Exam 2 (In class)
Monday, November 12 th	University Holiday – Lecture Cancelled
Friday, November 23 rd	University Holiday – Lecture Cancelled
Saturday, December 15 th	Final Exam (3:00 p.m. – 5:00 p.m.)

ECONOMICS 132 – FALL 2007
ENERGY ECONOMICS

LECTURE TOPICS AND READING ASSIGNMENTS

Introduction to Energy Resources (September 28th – October 5th)

- **Cassedy, E.S. & P.Z. Grossman.** Chapter 4 – The Demand for Energy. *Introduction to Energy: Resources, Technology, and Society*, 2nd Edition. (1998): 64-70.
- **Field, B.** Chapter 11 - Energy. *Natural Resource Economics - An Introduction*. (2003): 199-221.
- **Fouquet, R. and P.J.G. Pearson.** A Thousand Years of Energy Use in the United Kingdom. *The Energy Journal* Vol. 19, No. 4 (1998): 1-41.
- **OPEC Secretariat.** Energy Indicators. *OPEC Review* Vol. 30, No. 4 (Dec. 2006): 271-289.
- **Rosenberg, N.** The Role of Electricity in Industrial Development. *The Energy Journal* Vol. 19, No. 2 (1998): 7-24.
- **Econ 132 Handout 1:** “Energy Types”
- **Econ 132 Handout 2:** “Energy Indicators Graphs”

Tools for Economic Analysis of Energy Resources (October 8th – October 17th)

- **Adelman, M.A. and G.C. Watkins.** Costs of Aggregate Hydrocarbon Additions. *The Energy Journal* Vol. 25, No. 3 (2004): 37-51.
- **Econ 132 Handout 3:** “Template for Analyzing Articles” adapted from *The Miniature Guide to Critical Thinking Concepts and Tools* by R. Paul and L. Elder, 2007.
- **Econ 132 Handout 4:** “Energy Units: Conversion and Comparison”

Electricity Market Structure (October 22nd – November 7th)

- **Borenstein, S., Bushnell, J., and C.R. Knittel.** Market Power in Electricity Markets: Beyond Concentration Ratios. *The Energy Journal* Vol. 20, No. 4 (1999): 65-88.
- **Bushnell, J.** California’s Electricity Crisis: A Market Apart? *Energy Policy* Vol. 32, No. 9 (June 2004): 1045-1052.
- **Gruenspecht, H. and T. Terry.** Horizontal Market Power in Restructured Electricity Markets. Office of Policy, U.S. Department of Energy (March 2000): 1-17.
- **Hobbs, B.F., Rijkers, F.A.M., and M.G. Boots.** The More Cooperation, The More Competition? A Cournot Analysis of the Benefits of Electric Market Coupling. *The Energy Journal* Vol. 26, No. 4 (2005): 69-97.

ECONOMICS 132 – FALL 2007
ENERGY ECONOMICS

Electricity Market Structure (October 22nd – November 7th)

- **Wolfram, C.** Measuring Duopoly Power in the British Electricity Spot Market. *The American Economic Review* Vol. 89, No. 4 (1999): 805-826.
- **Wolfram, C.** Electricity Markets: Should the Rest of the World Adopt the United Kingdom's Reforms? *Regulation* Vol. 22, No. 4 (1999): 48-53.
- **Econ 132 Handout 5:** "The Cournot Model"

Fossil Fuel Use and Pollution (November 14th – November 21st)

- **Field, B.** Chapter 9 – The Valuation of Natural Resources. *Natural Resource Economics – An Introduction*. (2003): 151-171.
- **Owen, A.D.** Environmental Externalities, Market Distortions and the Economics of Renewable Energy Technologies. *The Energy Journal* Vol. 25, No. 3 (2004): 127-156.
- **Radetzki, M.** Coal or Nuclear in New Power Stations: The Political Economy of an Undesirable but Necessary Choice. *The Energy Journal* Vol. 21, No. 1 (2000): 135-147.
- **Econ 132 Handout 6:** "Electricity Cost Estimates"

Fossil Fuel Supplies (November 26th – December 7th)

- **Cassedy, E.S. & P.Z. Grossman.** Chapter 2 – Energy Resources. *Introduction to Energy: Resources, Technology, and Society, 2nd Edition*. (1998): 9-35.
- **Neumayer, E.** Scarce or Abundant? The Economics of Natural Resource Availability. *Journal of Economic Surveys* Vol. 14, No. 3 (2000): 307-329.
- **Porter, E.D.** Are We Running Out of Oil? *Advances in the Economics of Energy and Resources* Vol. 10 (1997): 185-251.
- **OPEC Secretariat.** Oil Outlook to 2025. *OPEC Review* Vol. 30, No. 4, (Dec. 2004): 203-234.
- **Utgikar, V.P. and J.P. Scott.** Energy Forecasting: Predictions, Reality and Analysis of Causes of Error. *Energy Policy* Vol. 34, No. 17 (Nov. 2006): 3087-3092.
- **Econ 132 Handout 7:** "The Hubbert Curve"
- **Econ 132 Handout 8:** "Estimates of the U.S. Hubbert Curve"
- **Econ 132 Handout 9:** "U.S.G.S. World Oil Resource Estimates"