



Department of Economics Course Outline

		Term:	Fall 2007 & Winter 2008
Course:	Economics 494 [Applied Energy Economics II]	Section:	01
Time:	W 15:00 – 17:50	Place:	ST 059 (subject to change)
Instructor:	1 – Fall: Afshin Honarvar 2 – Winter: TBA		
Office:	SS 405	Telephone.:	1 – CERI – 220-2391/220-5866 2 – TBA
Office Hours:	Wednesday 14:00 – 15:00 (subject to change)	E-mail:	1 – honarvar@ucalgary.ca 2 - TBA

Textbook(s):

Dahl, Carol (2004), *International Energy Markets, Understanding Pricing, Policies and, Profits*, Latest edition, PennWell Publishing. [**Required**]

Important Web Locations

Natural Resources Canada: www.nrcan.gc.ca

National Energy Board: www.neb.gc.ca

Alberta Department of Energy: www.energy.gov.ab.ca

Alberta Energy and Public Utilities Board: www.eub.gov.ab.ca

International Energy Agency: www.iea.org

Organization of Petroleum Exporting Countries: www.opec.org

BP statistical review: www.bp.com

U.S. Energy Information Administration: www.eia.doe.gov

Book(s) on Reserve:

There will be some personal copies of the articles below available at the Library.

Economics on Nonrenewable Natural Resources

Harold Hotelling, "The Economics of Exhaustible Resources," *Journal of Political Economy* 39 (1931): 137-75. .../2

William Nordhaus: "The Allocation of Energy Resources," *Brookings Papers on Economic Activity*, 1974.

Robert Solow, "The Economics of Resources or the Resources of Economics," *American Economic Review*, May 1974.

Ronald H. Schmidt, "Hotelling's Rule Repealed> An Examination of Exhaustible Resource Pricing," Federal Reserve Bank of San Francisco *Economic Review*, Fall 1988.

Michael C. Lynch, "Forecasting Oil Supply: Theory and Practice," *Quarterly Review of Economics and Finance*, special issue, 2002.

Fundamentals of the Energy Market

U.S. Energy Information Administration website: <http://www.eia.doe.gov/>.

Robert S. Pindyck: *The Structure of World Energy Demand*, MIT Press, 1979.

Economics of Climate Change and Global Warming Policy

John P. Weyant, editor, "The Costs of the Kyoto Protocol: A Multi-Model Evaluation," *The Energy Journal*, Special Issue, 1999.

Stephen P. A. Brown and Hillard G. Huntington, "Terms of Trade and OECD Policies to Mitigate Global Climate Change," *Economic and Financial Policy Review*, Federal Reserve Bank of Dallas, 2(1) 2003. http://www.dallasfedreview.org/articles/v02_n01_a01.html.

Energy Policy, Special Issue: An Economic Analysis of Climate Policy, March 2004

Economics of the World Oil Market

Dermot Gately: "Lessons from the 1986 Oil Price Collapse," *Brookings Papers on Economic Activity*, 1986.

Dermot Gately, "Do Oil Markets Work? Is OPEC Dead?": *Annual Review of Energy*, 1989.

Carole Dahl and Mine Yücel, "Testing Alternative Hypothesis of Oil Producer Behavior," *The Energy Journal*, December 1991.

Borenstein, Severin, A. Colin Cameron, and Richard Gilbert, "Do Gasoline Prices Respond Asymmetrically to Crude Oil Prices?" *Quarterly Journal of Economics*, February 1997.

Shihab-Eldin, Adnan et al (2004): "Oil Outlook to 2025" OPEC Review, September.

Al-Attar and Alomair: "Evaluation of upstream petroleum agreements and exploration costs" *OPEC Review* December 2006.

PennWell Publishing CO (2005): International Petroleum Encyclopedia.

Bureau of Transport and Regional Economics, Australia (2005) "Is the world running out of oil?"
.../3

Reynolds D. (2005) "The economics of oil definitions: the case of Canada's oil sands" OPEC Review.

BP: Statistical review of World Energy June 2005.

A. F. Alhajji and David Huettner, "The Target Revenue Model and the World Oil Market: Empirical Evidence from 1971 to 1994," *The Energy Journal*, 21(2), 2000.

A. F. Alhajji and David Huettner, "OPEC and World Crude Oil Markets from 1973 to 1994: Cartel, Oligopoly or Competitive," *The Energy Journal*, 21 (3), 2000.

Michael C. Lynch, "Forecasting Oil Supply: Theory and Practice," *Quarterly Review of Economics and Finance*, Special Issue, 2002

Morris A. Adelman, "World Oil Production and Prices: 1947-2000," *Quarterly Review of Economics and Finance*, Special Issue, 2002.

Economics and Restructuring of Natural Gas Markets

Energy Modeling Forum, *North American Natural Gas Markets*, Summary Report, EMF Report 9, Volume 1, Stanford University, December 1988.

Stephen P. A. Brown and Mine K. Yücel, "The Pricing of Natural Gas and U.S. Markets," Federal Reserve Bank of Dallas, *Economic Review*, Second Quarter 1993.

Economics and Restructuring of Electricity Markets

Robert K. Kaufmann, "The Effect of Expected Energy Prices on Energy Demand: Implications for Energy Conservation and Carbon Taxes," *Resource and Energy Economics*, May 1994.

Stephen P. A. Brown and Hillard G. Huntington, "The Economic Cost of U.S. Oil Conservation," *Contemporary Economic Policy*, July 1994.

Course Outline:

The Applied Energy Economics Course 494 studies the role of energy and energy resources from the economics perspective. Basic economic principles and methods are used to examine problems in the production, distribution, and use of energy in all its important forms including coal, oil, gas, nuclear, electricity, and the various alternative fuels. Special policy issues such as the environmental problems of energy use, regulation, the depletion of energy resources, and other problems pertaining to the energy industries including the effects of taxation of depletable resources will be discussed. The course will also review the relationships and volatility levels of energy spot and futures markets and will also introduce the students to energy forecasting, especially demand and prices and issues therein.

The course has been structured into **two sequential components**. The first component (in Fall 2007) will provide an **overview of energy sources and markets**. We will begin by reviewing key economic concepts and will review energy fundamentals such as energy sources, their reserves and market shares, costs and prices, temporal energy extraction, energy uses and key

definitions. The class will also study the economics of renewable energy sources and/or the energy environmental issues.

In the second component (in Winter 2008), the class will focus on **energy use and related issues in energy economics**. Details of the second component will be announced well in advance.

In summary the following topics will be covered in the first component:

1. Energy basics and history
2. Energy sources, production, consumption and prices
3. Oil market (supply, demand and price)
4. Forecasting in energy economics
5. International / National energy agencies
6. Temporal production decisions and oil sands industry
7. Economics of natural gas
8. Economics of nuclear power
9. Economics of coal
10. Economics of renewable energy

Grade Determination and Final Examination Details:

Since the course has two components, one in fall 2007 and the other in winter 2008, each component weighs 50% of the final grade. For the first component of the course, in Fall 2007, grades are determined as below:

Midterm	20%	
Assignments	30%	
Final Examination	50%	Registrar Scheduled

Tests and final exams are marked on a numerical (percentage) basis and a final numerical grade is calculated for each component of the course. The final numerical course grade is calculated using the weights indicated above (50% weight for each component) and then converted to the letter grades. As a guide to determining standing, these letter grade equivalences will generally apply

A+	94 – 100	B	71 – 79	C-	50 - 53
A	89 – 93	B-	65 – 68	D+	46 – 49
A-	84 – 88	C+	61 – 64	D	40 – 45
B+	80 – 83	C	54 – 60	D-	30 – 39
				F	0 - 29

If, for some reason, the distribution of grades determined using the aforementioned conversion chart appears to be abnormal the instructors reserve the right to change the grade conversion chart if the instructors, at the instructors' discretion, feel it is necessary to more fairly represent student achievement.

A passing grade on each component of the course is required for a student to pass the course as a whole.

Non-programmable calculators will be allowed during the writing of tests or final examinations.

There will be a Registrar scheduled final examination, 2 hours and held in a classroom. Tests and exams will not be multiple choice questions.

Students' Union Vice-President Academic:

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Society of Undergraduates in Economics (S.U.E.):

www.ucalgary.ca/~sue

Notes:

- Students seeking reappraisal of a piece of graded term work (term paper, essay, etc.) should discuss their work with the Instructor *within fifteen days* of the work being returned to the class.
- It is the student's responsibility to request academic accommodations. If you are a student with a documented disability who may require academic accommodation and have not registered with the Disability Resource Centre, please contact their office at

220-8237. Students who have not registered with the Disability Resource Centre are not eligible for formal academic accommodation. You are also required to discuss your needs with your instructor no later than fourteen (14) days after the start of this course.

Safewalk / Campus Security: 220-5333

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2007-09-07