Global Energy-Syllabus

Global Energy Course (Spring 2017)

From: Professor Jim Karna

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Overview

At no other point in history have humans faced greater challenges: how to satisfy humanity’s growing demand for energy, to feed and shelter a growing population, without causing long lasting and irremediable damage to the world’s environment; how to ensure that the world’s sources of energy remain plentiful, safe, reliable, uninterrupted, and available to all who need them.

This is a course that will provide you with a framework for understanding and analyzing some of the world’s major energy issues.

The first part of this course will provide you with some basic knowledge to understand and analyze these issues. We will review various sources of energy used throughout history and discuss the advantages and disadvantages of each, including: wind, water, solar, wood, steam, coal, kerosene, oil, gas, gasoline, electricity, nuclear, biofuels, and hydrogen. We will then review the various determinants that can dramatically affect the availability of these sources of energy, including technological innovations, economic growth and decline, government actions, natural disasters, conflicts and waste.

In the second part of this course, we will review the history of man’s quest for mastery of energy sources, and some of the major historic events have been affected by such quest. We will further examine how such quest has become intertwined with geopolitical movements, and review how conflicts and natural disasters can dramatically affect energy security.

Finally, in the third part of this course, we will study some global energy case problems, analyze such problems and make recommendations to solve them. We will conduct our analysis from different perspectives, including the perspectives of an individual, a community, a nation state, an international organization, a business and an environmental advocacy group.

Objectives

- Gain knowledge and tools to understand and analyze some of the world’s major energy issues. What are the world’s energy sources? What are the advantages and disadvantages of using each source? What are the determinants of the quantity and cost of these energy sources? What are the environmental consequences of the use of one source of energy over another?

- Gain an understanding of how government policies, industry actions, technological innovations and individual choices can dramatically affect the supply and price of the world’s energy sources. Are government incentives, taxes and tariffs an effective way to change energy consumption patterns? What is the role of international cartels and what role do they play in the supply of global energy? What are the intended and unintended effects of government
actions? Gain an understanding of how energy concerns have been historically intertwined with geopolitical events. Which major political events have been shaped by humanity’s competition over sources of energy? Which current political events are being similarly shaped?

- Gain an understanding of the current challenges to world energy security. How has the complexity and globalization of the world’s economy and the increased interdependence of nation states changed the world’s energy security? What impact will the current wars and conflicts in the Middle East have on global energy security? What impact will the U.S. shale oil revolution have on its relationships with other nations?

- Gain an understanding of some of the world’s future energy challenges and determine a course of action to overcome them. Is human induced climate change a valid concern? If so, should the world dramatically curtail its consumption of fossil fuels to avoid it? How can this be accomplished without seriously affecting living standards?

Method

The course will use the following methods to meet these objectives:

- Lecture and discussion
- Case studies
- Team based research and presentations
- Individual Research
- Videos and audios
- Guest speakers

Schedule

There will be one class session per week on Wednesdays, from 5:30 to 8:15 p.m., over a 15 week period. Weekly topics and assignments are as follows:

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<th>Week</th>
<th>Date</th>
<th>Topic</th>
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<tr>
<td></td>
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<td>Introduction to Global Energy Systems</td>
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<td>6</td>
<td>March 1</td>
<td>Global Energy Supplies-South America</td>
<td>Country Analysis, Mexico, Ecuador, Venezuela <a href="http://www.eia.gov">www.eia.gov</a>  The Quest, pp. 84-142,  Video: The Prize, Part 6, “Power to the Producers”</td>
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<td>15</td>
<td>May 3</td>
<td>Individual Research Presentations due  Course Review  Research Paper Due</td>
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<td>May 10</td>
<td>Final Exam (6 to 8:30 p.m.)</td>
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Requirements

This is a lecture, research and discussion course. Students are expected to participate in one team research project and presentation, and weekly class discussions. Students will also prepare and turn in one individual research paper, on a selected topic.

Team Research Project. For the Team Research Project, students will be assigned to a team that represents an interest group, such as a country’s government, a business or an environmental advocacy group. Each team will study energy case scenarios from the perspective of their represented group’s interests and come up with a recommended course of action to solve the problems presented by each scenario. Each team will then prepare a written outline of their findings/recommendations and be given 15 to 20 minutes to present their findings to the class, and recommend a course of action to solve the problems presented in each case scenario, based on the interests of the group they represent. After each team has had a chance to make their presentation, there will be a class discussion of the recommended courses of action. The first part of the team research project will be due and presented to the class on April 12. The second part will be due and presented on April 19.

Individual Research Project. Each student will research and write a 10 to 12 page\(^1\) research paper on a global energy topic they choose. Students will first choose an energy topic, and submit it to me for approval. They will then draft a 2 page outline of their paper and submit it to me. Once their final paper is prepared, they will then be given 10 to 15 minutes to present their findings to the class. Each memorandum will include endnotes and a bibliography, and the length of the notes and bibliography will be in addition to the page length, stated above. The individual research paper will be due and presented to the class on May 3.

Students are also expected to review the Global Energy Facebook class page weekly and contribute to class discussions about current energy developments. The class page can be found at: https://www.facebook.com/USTGLOBALENERGY

There will be periodic quizzes and a final exam.

Required Readings and Videos


Videos: (DVD) The Prize: The Epic Quest for Oil, Money and Power and An Inconvenient Truth.


\(^1\) Graduate students will be required to turn in a 15 to 17 page research paper.
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Supplemental readings, videos and other sources that will be made available on library reserve, through the BlackBoard class page and on the internet.

Performance

Final grades will be determined as follows:

- Quizzes 15%
- Class discussion/participation 15%
- Research Paper 25%
- Presentations 25%
- Final Exam 20%

Reports and papers delivered late will be penalized. Papers and outlines of presentations must be delivered in hard copy and in electronic copy on the dates due.

All information taken from external sources in order to meet the course requirements must be cited by source. Representation of the work of others as your own is plagiarism and is unacceptable.

Graduate Students

The quality of work from graduate students should be, by definition, superior in most instances to undergraduate work. For the research paper, graduate students will be required to turn in a 15 to 17 page research paper. On examinations, graduate students will also be held to a higher standard with regard to the precision of answers. In other words, partial credit will be limited.

Students with Disabilities

Any student with a disability requiring accommodations in this course must contact Counseling and Disability Services in Crooker Center. This office can be reached at (713) 525-6953 or 3162. The professor is unable to unilaterally grant ADA consideration to students.