Texas A&M University-Corpus Christi  
College of Business  
Course Syllabus - Spring 2016  
1/20 – 3/8

Course Number: ECON 5370  
Course Name: Special Topic: Energy Economics  
Class Time: online

Instructor: Jim Lee  
Office: OCNR 345  
Phone: (361) 825-5831

Office Hours: M-F 9:00 a.m. – 4:00 p.m. (online)  
Or by appointment

Internet: Blackboard http://bb9.tamucc.edu  
E-mail jlee@tamucc.edu

Required Materials: None for purchase.  
All assigned reading materials are available online via Blackboard.  

Prerequisites: None.

Instructional Methodology: Online lectures, assignments, discussion forums & research projects.

Course Description: This course introduces basic concepts of resource economics and applies economic principles to such energy issues as energy production, consumption, policies and their environmental consequences. Topics include optimal strategies of production and pricing for renewable and nonrenewable resources; unconventional versus conventional oil and natural gas reserves; geopolitical and policy effects on global energy supply and demand; and the interaction between energy markets, the environment, and the economy.

Relationship to Other Coursework: This cross-disciplinary course integrates skills from economics, finance, and other business disciplines, as well as specific knowledge in the energy industry.

Learning Objectives: At the end of the course, students will be able to:  
1. Describe historical development of the energy industry and current market trends  
2. Explain key concepts in economics of renewable and nonrenewable resources  
3. Apply economic tools to the analysis of energy production and consumption
4. Explain market dynamics of oil and natural gas
5. Employ analytical tools to perform long-term energy forecasts and investment decisions
6. Apply economic knowledge to the analysis of specific energy industries and policy issues
7. Evaluate the effect of resource extraction on the economy and the environment
8. Explain how local, regional, and global policies affect energy markets and prices
9. Evaluate factors for sustainable economic development

GENERAL COURSE POLICIES

Academic Honesty:
This course, and all other courses offered by the College of Business (COB), requires all of its students to abide by the COB Student Code of Ethics (available online at www.cob.tamucc.edu). Provisions and stipulations in the code are applicable to all students taking College of Business courses regardless of whether or not they are pursuing a degree awarded by the COB.

- **Exams:** If “cheating” in the sense of violating the integrity of academic honesty in an exam occurs, I will contact you immediately. Strong evidence of collaboration between students will result in a zero exam grade for all students involved. I may also ask students to verify their knowledge on a random basis to ensure they have completed their exams with their own knowledge. In this case, the students will be asked to take another exam with similar questions either in person or online.

Dropping a Class:
I hope that you never find it necessary to drop this or any other class. However, events can sometimes occur that make dropping a course necessary or wise. Please consult with me before you decide to drop to be sure it is the best thing to do. Should dropping the course be the best course of action, you must initiate the process to drop the course by going to the Student Services Center and filling out a course drop form. Just stopping attendance and participation WILL NOT automatically result in your being dropped from the class. July 28 is the last day to drop this class with an automatic grade of “W” this term.

Statement of Civility:
Texas A&M University-Corpus Christi has a diverse student population that represents the population of the state. Our goal is to provide you with a high quality educational experience that is free from repression. You are responsible for following the rules of the University, city, state and federal government. We expect that you will behave in a manner that is dignified, respectful and courteous to all people, regardless of sex, ethnic/racial origin, religious background, sexual orientation or disability. Behaviors that infringe on the rights of another individual will not be tolerated.

Grade Appeals:
As stated in University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures, a student who believes that he or she has not been held to appropriate academic standards as outlined in the class syllabus, equitable evaluation procedures, or appropriate grading, may appeal the final grade given in the course. The burden of proof is upon the student to demonstrate the appropriateness of the appeal. A student with a complaint about a grade is encouraged to first discuss the matter with the instructor. For complete details, including the responsibilities of the parties involved in the process and the number of days allowed for completing the steps in the process, see University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures. These documents are accessible through the University Rules Web site at
For assistance and/or guidance in the grade appeal process, students may contact the Dean’s office in the college in which the course is taught or the Office of the Provost.

**Disabilities Accommodations:**
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please call or visit Disability Services at (361) 825-5816 in Corpus Christi Hall 116.

If you are a returning veteran and are experiencing cognitive and/or physical access issues in the classroom or on campus, please contact the Disability Services office for assistance at (361) 825-5816.

**Statement of Academic Continuity:**
In the event of an unforeseen adverse event, such as a major hurricane and classes could not be held on the campus of Texas A&M University–Corpus Christi; this course would continue through the use of Blackboard and/or email. In addition, the syllabus and class activities may be modified to allow continuation of the course. Ideally, University facilities (i.e., emails, web sites, and Blackboard) will be operational within two days of the closing of the physical campus. However, students need to make certain that the course instructor has a primary and a secondary means of contacting each student.
COURSE PERFORMANCE AND GRADING

Student performance will be evaluated on the basis of:
- Weekly writing assignments (70%)
- Term Project (30%)

The following is the weight distribution of coursework for determining the overall course average:

<table>
<thead>
<tr>
<th>Coursework</th>
<th>Due Date</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1 Assignment</td>
<td>11 PM, Sunday, Week 1</td>
<td>10%</td>
</tr>
<tr>
<td>Week 2 Assignment</td>
<td>11 PM, Sunday, Week 2</td>
<td>10%</td>
</tr>
<tr>
<td>Week 3 Assignment</td>
<td>11 PM, Sunday, Week 3</td>
<td>10%</td>
</tr>
<tr>
<td>Week 4 Assignment</td>
<td>11 PM, Sunday, Week 4</td>
<td>10%</td>
</tr>
<tr>
<td>Week 5 Assignment</td>
<td>11 PM, Sunday, Week 5</td>
<td>10%</td>
</tr>
<tr>
<td>Week 6 Assignment</td>
<td>11 PM, Sunday, Week 6</td>
<td>10%</td>
</tr>
<tr>
<td>Week 7 Assignment</td>
<td>11 PM, Sunday, Week 7</td>
<td>10%</td>
</tr>
<tr>
<td>Term Project Paper</td>
<td>11 PM, Sunday, Week 7</td>
<td>30%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

* All times are U.S. Central Time.

The Official Course Grade is determined by a letter grade using the following scale: A: >90%; B: 80-89.99%; C: 70-79.99%; D: 60-69.99%; F: below 60%.

The student’s performance, not the instructor, determines the course grade. No additional work will be given after the final week to supplement a course grade. Grades are given based solely on student performance, not needs or any personal reasons.
**GRADED ASSIGNMENTS**

In this course, you are required to complete the following graded assignments:

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Details</th>
<th>Where and How to Submit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weekly Assignments</td>
<td>In each assignment, you will respond to the questions listed for that particular week. The suggested length is a minimum of 500 words.</td>
<td>Click the “Content” link in the left-hand menu. Access the folder for a particular week and submit your assignment by uploading your Word (doc or docx) file.</td>
</tr>
<tr>
<td>Term Project</td>
<td>Complete the Term Project with a 15-page paper.</td>
<td>Click the “Content” link in the left-hand menu. Click the &quot;Term Project” link to begin. Upload your completed paper by the deadline.</td>
</tr>
</tbody>
</table>
ONLINE COURSE PRELIMINARIES

To successfully complete this course, you should:

- First prepare your computer with access to the Internet.
- Click on each Content Folder on this page for material contents of each Lesson Unit, and complete all assignments and activities. This course contains a total of 7 Lesson Units, each corresponds to one week of this course.
- Learn by actively participating in all lesson activities and by reviewing the feedback for the graded assignments and exams.

Help Desk:
For technical issues on Bb9, call Island Online help desk 361-825-2825 or email iol.support@tamucc.edu

Expectations for students:
Keep in mind that this is a 7-week online course. In contrast to a regular face-to-face course that runs for about four months, this course is much more time intensive and it requires a great deal of motivation and self-discipline from you as a learner. As a rule of thumb, you should be ready to put aside at least 15 hours each week for completing the reading assignments and prepare for the term project. Observe all due dates. There are assignments due every week. The deadline for most graded assignments is Sunday 11 PM (US Central).
# Topical Outline of Energy Economics

<table>
<thead>
<tr>
<th>WEEK 1</th>
<th>TOPIC</th>
<th>READING MATERIALS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. Overview</td>
<td></td>
</tr>
</tbody>
</table>
|        | a. Introduction and background data | Bhattacharyya, Ch. 1  
Tanaka, 2015 Energy Outlook PPT  
EIA, world oil consumption; world oil production;  
MP4 Videos  
Congressional Research Service, U.S. Oil Export Policy, 2014  
Modeling Oil & Gas Basics:  
EIA Oil & Gas Supply Module:  
http://www.eia.gov/forecasts/aeo/nems/documentaion/ogsm/pdf/m063%282013%29.pdf  
Oil History: http://www.sjvgeology.org/history |
|        | b. Energy demand analysis | Bhattacharyya, Ch. 3 |
|        | c. Energy demand forecasting | Bhattacharyya, Ch. 5 |
Hasanov, Fuel Demand in Turkey, Energy Economics, 2015 |

<table>
<thead>
<tr>
<th>WEEK 2</th>
<th>TOPIC</th>
<th>READING MATERIALS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2. Energy Demand</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. Energy demand analysis</td>
<td>Bhattacharyya, Ch. 3</td>
</tr>
<tr>
<td></td>
<td>b. Energy demand forecasting</td>
<td>Bhattacharyya, Ch. 5</td>
</tr>
</tbody>
</table>
Hasanov, Fuel Demand in Turkey, Energy Economics, 2015 |
|        | d. Technology and cost efficiency | Tunstall, 2015  
EIA, Drilling Efficiency, MP4 Video  
Hudgins and Lee, Modeling Oil Drilling, 2015 |

<table>
<thead>
<tr>
<th>WEEK 3</th>
<th>TOPIC</th>
<th>READING MATERIALS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3. Energy Supply</td>
<td></td>
</tr>
</tbody>
</table>
|        | a. Energy investment projects | Bhattacharyya, Ch. 7  
Pitt, 2011  
MSETC, Workforce Needs, 2009  
Time lapse of drilling a new well (Marathon Oil):  
https://www.youtube.com/watch?v=6_j7UkuzJHU |
|        | b. Fossil fuel supply | Bhattacharyya, Ch. 8 |
|        | c. Non-renewable resource supply | Bhattacharyya, Ch. 9  
Holahan & Kronchke, IREE, 2004  
Chapman, Nonrenewable Resources, 1933  
Khanna, On the Economics of Non-Renewable Resources, EOLSS, 2003  
Handbook of Natural Resources, Ch. 17, 18, 22  
Ragan, Optimal Extraction Rate, Ch. 15 |
|        | d. Renewable resource supply | Bhattacharyya, Ch. 11 (skim) |
|        | e. Technology and cost efficiency | Tunstall, 2015  
EIA, Drilling Efficiency, MP4 Video  
Hudgins and Lee, Modeling Oil Drilling, 2015 |
|        | f. Conventional and unconventional oil and natural gas reserves | Hunt, Unconventional oil and gas activity PPT  
TAMU, ECON 633, Lecture 1 |
### WEEK 4

#### 4. Energy Markets and Pricing

- **a. International oil market**
  - Bhattacyharyya, Ch. 14
  - TAMU, ECON 633, Lecture 2

- **b. Natural gas markets**
  - Bhattacyharyya, Ch. 15

### WEEK 5

#### 5. Energy and the Economy

- **a. Modeling energy systems**
  - Bhattacyharyya, Ch. 17

- **b. Impacts of energy price shocks**
  - Bhattacyharyya, Ch. 19

- **c. Energy security**
  - Bhattacyharyya, Ch. 20

- **d. Economic impacts of energy production**
  - Bhattacyharyya, Ch. 21
  - Brown, Blessing or Curse, 2014
  - UTSA, Economic Impact of the Eagle Ford Shale, 2014
  - CaRDI Report, 2011

### WEEK 6

#### 6. Energy and the Environment

- **a. Environment protection**
  - Bhattacyharyya, Ch. 23

- **b. Pollution from stationary sources**
  - Bhattacyharyya, Ch. 24

- **c. Pollution from mobile sources**
  - Bhattacyharyya, Ch. 25

- **d. Tragedy of the commons**
  - Harris & Roach, Environmental and Natural Resource Economics, Ch. 5

- **e. Property rights and externalities**

### WEEK 7

#### 7. Energy Policy and Regulation

- **a. Regulation**
  - Bhattacyharyya, Ch. 28

- **b. Deregulation**
  - Bhattacyharyya, Ch. 29
Texas A&M University-Corpus Christi
Energy Economics
Term Project

STEPS

1. **Due end of Week 3:** Identify a topic area. The following are suggestions:
   - Economics of energy resources (supply and demand)
   - Renewable vs. nonrenewable energy resources
   - Energy markets (world and regional)
   - Oil and gas industry
   - Energy technological advances
   - Emerging energy resources
   - Energy production
   - Energy resources’ impact on the economy
   - Energy policy and market regulations
   - Natural resources and the environment
   - Energy outlook

2. **Due end of Week 4:** Post at least one question or issue to investigate: e.g., How do current technological advances affect the long-term outlook for energy resources?

3. **Due end of Week 5:** Submit a list of 5 or more studies (newspaper articles, academic or trade journal articles, books etc.).

4. **Due end of Week 7:** Submit a term paper under the following guidelines.

GUIDELINES

- **Cover page:** A title, student name, and a 100-word or less abstract summarizing the contents.
- **Format:** Contents at least 15 pages, double-spaced, 1 inch margin around, 12-point font
- **Content Sections:**
  1. introduction and significance of the topic issue;
  2. interpretations with the key economic concepts involved;
  3. detailed discussion of the literature and findings; and
  4. conclusion and policy implications
- **References:** Cited literature in the content section