Introduction to the Oil & Gas industry  
CNST 6335

Course Description
The course provides the student with a basic knowledge and understanding of the oil and gas industry, including its history, technical aspects, business model, and impact on society and the environment. The primary emphasis is on operations in exploration, production, transportation, refining, and marketing. At the end of the course, the student should be able to speak in a general way on all aspects of the industry and be familiar with common industry terminology.

Course Prerequisites
Graduate standing or consent of instructor.

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Textbook
The Oil & Gas Industry: A Nontechnical Guide by Joseph F. Hilyard. PennWell Books  
The textbook is available online through the UH Library.

Learning Objectives
Upon the completion of the course students will demonstrate an understanding of:
1. Operations of the oil and gas industry across the value chain
2. Relationships and interactions between industry players
3. Importance of oil and gas in the economy
4. Likely future scenarios for the industry
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<tr>
<th>Module#</th>
<th>Topics</th>
<th>Reading Assignments</th>
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| 1 (Weeks 1-2) | **Introduction and History of the Industry**  
- Energy and society  
- Development of the industry | Chapter 2 Pages 19 – 27  
Chapter 3 Pages 36 – 47 |
| 2 (Week 3) | **Petroleum Geology**  
- Origin of oil and gas  
- Hydrocarbon accumulations  
- Conventional vs. unconventional | Chapter 1 |
| 3 (Week 4) | **Exploration**  
- Exploration tools and methods  
- Exploration economics | Chapter 4 |
| 4 (Week 5) | **Drilling and Testing**  
- Mechanics of drilling  
- Drilling equipment  
- Evaluation of drilling results | Chapter 5 Pages 67 – 87  
Chapter 6 Pages 99 – 102 |
| 5 (Week 6) | **Production**  
- Equipping a well for production  
- Production equipment  
- Oil and gas processing | Chapter 5 Pages 88 – 98  
Chapter 6 Pages 99 – 113  
Chapter 7 Pages 115 – 119; 123 – 129 |
| 6 (Week 7) | **Reservoir Mechanics and Production Management**  
- Properties of hydrocarbon fluids  
- Reserve estimation  
- Production management techniques | Chapter 7 Pages 119 – 123 |
| 7 (Week 8) | **Transportation and Storage**  
- Transportation methods  
- Economics of transportation  
- Storage methods and rationale | Chapters 8, 9, and 10 |
| 8 (Week 9) | **Refining and Petrochemicals**  
- Hydrocarbon chemistry  
- Refining basics  
- Brief overview of petrochemical industry | Chapter 11 |
| 9 (Week 10) | **Marketing**  
- Oil and natural gas trading  
- Pricing  
- Retail marketing  
- LNG | Chapter 14 |
| 10 (Week 11) | **Structure of the Industry**  
- Major industry players  
- Interactions between industry entities  
- Relationships with governments and the public | Chapter 13 |
| 11 (Week 12) | **Energy and the Environment**  
- Climate change and the energy industry  
- Carbon reduction methods  
- Economics of carbon reduction | None |
| 12 (Week 13) | **Future of the Oil and Gas Industry**  
- Peak oil  
- Alternative energy  
- Future oil and gas production | Chapter 15 |
Grading
There will be a quiz after each module, periodic homework assignments, and a final exam. Except for the last module, quizzes and homework will be due one week after the scheduled completion date of the module. Grade weighting is as follows:

- Quizzes 30%
- Homework 35%
- Final exam 35%

Grading scale

- A = 90 to 100%
- B = 80 to 89%
- C = 70 to 79%
- D = 60 to 69%
- F = Less than 60%

Homework Assignments
Late submissions will incur score penalties. Homework submission must be through Blackboard as an attachment to an email.

Quizzes
Quizzes are designed to assist you in understanding the course materials and to provide you with examples of the type of questions that will be on the final exam. Quizzes will be posted periodically. You are allowed only one chance to open each quiz. Do not attempt to open a quiz until you are ready to answer the questions and complete the quiz.

Final Exam
The Final Exam will be scheduled online during the last week of class. The exact time will be announced during the semester. Students must make early arrangements with their employers and others to make sure they do not miss the Final Exam. There will be no makeover exams.

Academic Honesty
Students who violate University rules on scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and dismissal from The University. Since dishonesty harms the individual, all students, and the integrity of The University, policies on scholastic dishonesty will be strictly enforced.
**Students with Disabilities**
University of Houston provides, upon request, appropriate academic adjustments for qualified students with disabilities. Any student with a documented disability (physical or cognitive) who requires academic accommodations should contact the Center for Students with Disabilities (713/743-5400) for more assistance.

**Exam Policy**
Exams will include material covered in class discussions and homework assignments. The student is responsible for all reading assignments and class handouts whether or not covered in class or listed on the syllabus.

**Course/Instructor Evaluation**
A course/instructor evaluation will be conducted in class during the last scheduled lecture. Any suggestions you have on improving the course, however, are welcome throughout the term.

For detailed information about Disabilities, Religious Holy Days, the Academic Calendar, and Academic Honesty, and other information, please visit the UH website: [Student Resources](#)

**Disclaimer**
This syllabus represents my current plans and objectives. As we go through the semester, those plans may need to change to enhance class learning or for other reasons. Any such changes will be communicated clearly.