Industrial Processes (PTAC 1354) Online

Credit: 3 semester credit hours (3 hours lecture)

Prerequisite/Co-requisite: PTAC 2420 and SCIT 1494. Completed the Online Orientation and answered 7+ questions correctly on the Online Learner Self-Assessment:
http://www.lit.edu/depts/DistanceEd/OnlineOrientation/OOStep2.aspx

Course Description
The study of the common types of industrial processes. This course is time bound, structured, and completed totally online.

Required Textbook and Materials
   a. ISBN number is 1593701586
2. Oil & Gas Production Handbook, free online textbook
   a. https://library.e.abb.com/public/34d5b70e18f7d6c8c1257be500438ac3/Oil%20and%20gas%20production%20handbook%20ed3x0_web.pdf

Course Objectives
Upon completion of this course, the student will be able to:
1. Describe processes and operations typical to the processing industry.

Course Outline
A. Oil & Gas Production
   1. Introduction
   2. Exploration
   3. Production
   4. Upstream Process Sections
   5. Midstream
B. Petroleum Refining
   1. The Evolution of Petroleum Products
   2. From the Oil patch to the refinery
   3. Crude Oil Characteristics
   4. Distilling
   5. Vacuum Flashing
   6. The Chemistry of Petroleum
   7. Refinery Gas Plants
   8. Cat Cracking
   9. Alkylation
   10. Catalytic Reforming
   11. Hydrocracking
   12. Isomerization
   13. Residue Reduction
   14. Gasoline
   15. Distillate and Residual Fuels
   16. Ethylene Plants
   17. Solvent Recovery of Aromatics
Grade Scale
90 – 100  A
80 – 89   B
70 – 79   C
60 – 69   D
0 – 59    F

Course Evaluation
Final grades will be calculated according to the following criteria:
Discussions  10%
Assignments 20%
Test         40%
Final Exam   30%

Course Requirements
1. Calculate temperature conversions
2. Calculate Specific and API gravities
3. Demonstrate knowledge of Upstream, Refinery and Chemical plant processes
4. Explain requirements for gasoline, jet fuel and diesel engines.

Course Requirements
1. Post online responses to student-to-student and student-to-instructor discussions.
2. Complete the online tests, assignments and discussions by the due dates shown on the course calendar.
3. Log onto Blackboard and access the course a minimum of three times per week.

Course Policies
1. Students are expected to use proper net etiquette while participating in course emails, assignment submissions and online discussions. No foul or harsh language will be tolerated.
2. No cheating of any kind will be tolerated. Students caught cheating or helping someone to cheat can and will be removed from the class for the semester. Cheating can result in expulsion from LIT.
3. A student who wishes to drop a course is responsible for initiating and completing the drop process. A student who stops coming to class, and fails to drop the course, will earn an “F” in the course.

Technical Requirements
The latest technical requirements, including hardware, compatible browsers, operating systems, software, Java, etc. can be found online at:
https://help.blackboard.com/en-us/Learn/9.1_SP_14/Student/015_Browser_Support/010_Browser_Support_SP_14
A functional internet connection, such as DSL, cable, or WiFi is necessary to maximize the use of the online technology and resources.
Student Code of Conduct Statement
It is the responsibility of all registered Lamar Institute of Technology students to access, read, understand and abide by all published policies, regulations, and procedures listed in the LIT Catalog and Student Handbook. The LIT Catalog and Student Handbook may be accessed at www.lit.edu or obtained in print upon request at the Student Services Office.

Disabilities Statement
The Americans with Disabilities Act of 1992 and Section 504 of the Rehabilitation Act of 1973 are federal anti-discrimination statutes that provide comprehensive civil rights for persons with disabilities. Among other things, these statutes require that all students with documented disabilities be guaranteed a learning environment that provides for reasonable accommodations for their disabilities. If you believe you have a disability requiring an accommodation, please contact the Special Populations Coordinator at (409) 880-1737 or visit the office in Student Services, Cecil Beeson Building. http://www.lit.edu/depts/stuserv/special/default.aspx

Course Schedule (subject to change)

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<tr>
<th>Online Week</th>
<th>Topic</th>
<th>Reference</th>
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<tbody>
<tr>
<td>1</td>
<td>Course introduction and policies</td>
<td>Online: Week 1A</td>
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<tr>
<td></td>
<td><em>Oil &amp; Gas Production Handbook</em></td>
<td>Text: pg. 1-18</td>
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<td>• Introduction</td>
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<td>• Exploration</td>
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<td></td>
<td>• Production</td>
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<td></td>
<td>• Upstream Process Sections</td>
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<td>• Midstream</td>
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<td>2</td>
<td><em>Petroleum Refining Textbook</em></td>
<td>Text: pg. 1-24 (Ch.1,2,3)</td>
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<td>Crude Oil Characteristics</td>
<td>Online: Week 2</td>
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<td>Text: pg. 25-48 (Ch.4,5)</td>
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<td>Vacuum Flashing</td>
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<td>The Chemistry of Petroleum</td>
<td>Text: pg. 49-56 (Ch 6)</td>
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<td>5</td>
<td>Refinery Gas Plants</td>
<td>Text: pg. 57-66 (Ch 7)</td>
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<td>6</td>
<td>Cat Cracking</td>
<td>Text: pg. 69-80 (Ch 8)</td>
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<td>7</td>
<td>Alkylation</td>
<td>Text: pg. 81-88 (Ch 9)</td>
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<th>Chapter(s)</th>
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<td>Hydrocracking</td>
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<td>Isomerization</td>
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<td>Residue Reduction</td>
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<td>Ethylene Plants</td>
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<td>Final Exam</td>
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