

Advanced Industrial Processes PTAC 1354 3A1

CREDIT

3:3:0

MODE OF INSTRUCTION

Face to Face

PREREQUISITE/CO-REQUISITE:

Chemistry (CHEM 1111/1311) and Systems (PTAC 2420)

COURSE DESCRIPTION

A study of various process systems including related scientific principles.

COURSE OBJECTIVES

Upon completion of this course, the student will be able to

- Describe the purpose and function of common process systems;
- Explain and demonstrate the operation of each process system.

INSTRUCTOR CONTACT INFORMATION

Instructor:	James Robinson
Email:	jrobinson2@lit.edu
Office Phone:	409-247-5376
Office Location:	ExxonMobil PATC Building room 205
Office Hours:	Tuesday and Thursday [9:00- 11:30 am]

REQUIRED TEXTBOOK AND MATERIALS

Petroleum Refining, 4th Edition by William L. Leffler ISBN #: 978-1-59370-158-1

Oil and Gas Production Handbook, free online textbook

http://www.itk.ntnu.no/ansatte/Onshus_Tor/Oil%20and%20gas%20production%20handbook%20ed1x3a5%20comp.pdf

ATTENDANCE POLICY

1. According to campus policy, students must be in attendance for 80% of class days. Following is the policy for absences in all 16 week process technology classes and labs.

Miss 3 classes or less	receive calculated grade
Miss 4 classes	10 points dropped from calculated grade
Miss 5 classes	20 points dropped from calculated grade
Miss 6 classes	30 points dropped from calculated grade
Miss 7 or more classes	student receives an 'F'

Approved: **Initials/date**



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2. A student is absent if they are not physically in the class room. An excused absence simply means that the student can make-up any missed work.
3. Three student tardies will be considered one absence. A student is considered to be tardy once the instructor has completed taking roll.
4. Class attendance and participation is an individual student responsibility. Students taking traditional face-to-face courses are expected to attend class and to complete all assignments by stated due dates.

DROP POLICY

If you wish to drop a course, you are responsible for initiating and completing the drop process. If you stop coming to class and fail to drop the course, you will earn an "F" in the course.

COURSE CALENDAR

DATE	TOPIC	READINGS (Due on this Date)	ASSIGNMENTS (Due on this Date)
Module 1	Introduction, syllabus, expectations		
Module 2	Crude – The Incredible Journey	Video	
	Continue video	Video	
Module 3	Oil & Gas Production	Oil & Gas Production Handbook, pg. 21-34	
	The Evolution of Petroleum Refining	Chapter 1	
Module 4	From the Oil Patch to the Refinery	Chapter 2	
	Test #1: Oil & Gas Production Info; Chapters 1-2		
Module 5	Crude Oil Characteristics	Chapter 3	Distillation Curve
	Distilling	Chapter 4	
Module 6	Vacuum Flashing	Chapter 5	
	Test #2: Chapter 3-5		
Module 7	The Chemistry of Petroleum	Chapter 6	
	Refinery Gas Plants	Chapter 7	Storage Paper
Module 8	Cat Cracking	Chapter 8	
	Test #3: Chapters 6-8		
Module 9			
Module 10	Alkylolation	Chapter 9	

	Cat Reforming	Chapter 10	
Module 11	Hydrocracking	Chapter 11	
	Test #4: Chapters 9-11		
Module 12	Isomerization	Chapter 12	
	Residue Reduction	Chapter 13	Coke Paper
Module 13	Gasoline	Chapter 14	
	Test #5: Chapters 12-14		
Module 14	Distillate & Residual Fuels	Chapter 15	
	Ethylene Plants	Chapter 19	
Module 15	Solvent Recovery of Aromatics	Chapter 21	
	LNG Plant Overview	PowerPoint	
Module 16	Test #6: Chapters 15-19-21 and LNG		
	Review for Final		
Exam Week	Comprehensive Lecture Final		

Calendar subject to change due to unforeseen circumstances.

COURSE EVALUATION

Final grades will be calculated according to the following criteria:

Participation/HW: 20%

Tests: 40%

Final Exam: 40%

GRADE SCALE

- 90-100 A
- 80-89 B
- 70-79 C
- 60-69 D
- 0-59 F

TECHNICAL REQUIREMENTS

The latest technical requirements, including hardware, compatible browsers, operating systems, etc. can be online at <https://lit.edu/online-learning/online-learning-minimum-computer-requirements>. A functional broadband internet connection, such as DSL, cable, or WiFi is necessary to maximize the use of online technology and resources.

DISABILITIES STATEMENT

The Americans with Disabilities Act of 1990 and Section 504 of the Rehabilitation Act of 1973 are federal anti-discrimination statutes that provide comprehensive civil rights for persons with disabilities. LIT provides reasonable accommodations as defined in the Rehabilitation Act of 1973, Section 504 and the Americans with Disabilities Act of 1990, to students with a diagnosed disability. The Special Populations Office is located in the Eagles' Nest Room 129 and helps foster a supportive and inclusive educational environment by maintaining partnerships with faculty and staff, as well as promoting awareness among all members of the Lamar Institute of Technology community. If you believe you have a disability requiring an accommodation, please contact the Special Populations Coordinator at (409)-951-5708 or email specialpopulations@lit.edu. You may also visit the online resource at [Special Populations - Lamar Institute of Technology \(lit.edu\)](#).

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. Please note that the online version of the *LIT Catalog and Student Handbook* supersedes all other versions of the same document.

STARFISH

LIT utilizes an early alert system called Starfish. Throughout the semester, you may receive emails from Starfish regarding your course grades, attendance, or academic performance. Faculty members record student attendance, raise flags and kudos to express concern or give praise, and you can make an appointment with faculty and staff all through the Starfish home page. You can also login to Blackboard or MyLIT and click on the Starfish link to view academic alerts and detailed information. It is the responsibility of the student to pay attention to these emails and information in Starfish and consider taking the recommended actions. Starfish is used to help you be a successful student at LIT.

ADDITIONAL COURSE POLICIES/INFORMATION

AI Statement

Lamar Institute of Technology (LIT) recognizes the recent advances in Artificial Intelligence (AI), such as ChatGPT, have changed the landscape of many career disciplines and will impact many students in and out of the classroom. To prepare students for their selected careers, LIT desires to guide students in the ethical use of these technologies and incorporate AI into classroom instruction and assignments appropriately. Appropriate use of these technologies is at the discretion of the instructor. Students are reminded that all submitted work must be their own original work unless otherwise specified. Students should

contact their instructor with any questions as to the acceptable use of AI / ChatGPT in their courses.

Fall 2024 PTAC 1354 Class SCHEDULE		
Date		
8/27/2024	Introduction, syllabus, expectations	
8/29/2024	Crude – The Incredible Journey	Video
9/3/2024	Continue video	Video
9/5/2024	Oil & Gas Production	Oil & Gas Production Handbook, pg. 21-34
9/10/2024	The Evolution of Petroleum Refining	Chapter 1
9/12/2024	From the Oil Patch to the Refinery	Chapter 2
9/17/2024	Test #1: Oil & Gas Production Info; Chapters 1-2	
9/19/2024	Crude Oil Characteristics	Chapter 3
9/24/2024	Distilling	Chapter 4
9/26/2024	Vacuum Flashing	Chapter 5
10/1/2024	Test #2: Chapter 3-5	
10/3/2024	The Chemistry of Petroleum	Chapter 6
10/7/2024	Refinery Gas Plants	Chapter 7
10/9/2024	Cat Cracking	Chapter 8
10/14/2024	Test #3: Chapters 6-8	
10/16/2024		
10/21/2024		
10/23/2024	Alkylation	Chapter 9
10/28/2024	Cat Reforming	Chapter 10
10/30/2024	Hydrocracking	Chapter 11
11/4/2024	Test #4: Chapters 9-11	
11/6/2024	Isomerization	Chapter 12

11/11/2024	Residue Reduction	Chapter 13
11/13/2024	Gasoline	Chapter 14
11/18/2024	Test #5: Chapters 12-14	
11/20/2024	Distillate & Residual Fuels	Chapter 15
11/25/2024	Ethylene Plants	Chapter 19
11/27/2024	Solvent Recovery of Aromatics	Chapter 21
12/2/2024	LNG Plant Overview	PowerPoint
12/4/2024	Test #6: Chapters 15-19-21 and LNG	
12/9/2024	Review for Final	
12/11/2024	Comprehensive Lecture Final	