

## Advance Industrial Processes (PTAC 1354 2C1)

### CREDIT

3:3:0

### MODE OF INSTRUCTION

Online

### PREREQUISITE/CO-REQUISITE:

Chemistry (SCIT 1493) 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: Dr. Valerie Worry

Email: [vaworry@lit.edu](mailto:vaworry@lit.edu)

Office Phone: 409-247-5306

Office Location: PATC 204

Office Hours: Monday/Wednesday 3:00 – 4:00 pm

### REQUIRED TEXTBOOK AND MATERIALS

*Petroleum Refining, 4<sup>th</sup> 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](http://www.itk.ntnu.no/ansatte/Onshus_Tor/Oil%20and%20gas%20production%20handbook%20ed1x3a5%20comp.pdf)

### ATTENDANCE POLICY

1. All work is to be completed by the posted due date. There will be no extensions.

### 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.

Approved: **Initials/date**



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## COURSE CALENDAR

DATE	TOPIC	READINGS (Due on this Date)	ASSIGNMENTS (Due on this Date)
Week 1	Introduction, syllabus, expectations		Discussions, Upstream Report
	Crude – The Incredible Journey	Video	
	Oil & Gas Production	Oil & Gas Production Handbook, pg. 21-34	
Week 2	The Evolution of Petroleum Refining	Chapter 1	
	From the Oil Patch to the Refinery	Chapter 2	
	Crude Oil Characteristics	Chapter 3	Distillation Curve
Week 3	Distilling	Chapter 4	
	Vacuum Flashing	Chapter 5	Discussion
Week 4	<b>Test #1: Chapter 1-5, Oil &amp; Gas Production HB</b>		
	The Chemistry of Petroleum	Chapter 6	Discussion
Week 5	Refinery Gas Plants	Chapter 7	Discussion; Paper
Week 6	Cat Cracking	Chapter 8	Discussion
Week 7	Alkylation	Chapter 9	Discussion
Week 8	<b>Test #2: Chapters 6-9</b>		
	Cat Reforming	Chapter 10	Discussion
Week 9	Hydrocracking	Chapter 11	Discussion
Week 10	Isomerization	Chapter 12	Discussion
Week 11	Residue Reduction	Chapter 13	Coke Paper
Week 12	<b>Test #3: Chapters 10-13</b>		
	Gasoline	Chapter 14	Discussion
Week 13	Distillate & Residual Fuels	Chapter 15	Discussion
Week 14	Ethylene Plants	Chapter 19	Discussion
Week 15	Solvent Recovery of Aromatics	Chapter 21	Discussion
	<b>Test #4: Chapters 15-19-21</b>		
Week 16	Comprehensive Lecture Final		

Calendar subject to change due to unforeseen circumstances.

## **COURSE EVALUATION**

Final grades will be calculated according to the following criteria:

Discussions	10%
Assignments	20%
Test	40%
Final Exam	30%

## **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](mailto: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](http://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**