Process Technology III (PTAC 2438)

Credit: 4 semester credit hours (3 lecture, 3 hours lab)

Prerequisite/Co-requisite: PTAC 1332, PTAC 1410, SCIT 1494/PTAC 2420

Course Description

This course emphasizes activities associated with the hands-on operations of process equipment.

Required Textbook and Materials

1. *Process Technology Plant Operations*, 2nd Edition; Speegle.
   ISBN: 1133950159
2. *Simtronics Student Workbook* (Kampus Korner Bookstore only)
3. Equipment (To be purchased by the student)
   a. fire retardant clothing
   b. hardhat
   c. safety glasses
   d. ear plugs
   e. gloves
   f. shoes (no open toes/sandals)

Course Objectives

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

1. Operate various process systems;
2. Work in self-directed teams;
3. Write and follow safety and operational procedures;
4. Collect and use data for determination of process specifications.

Course Outline

A. Introduction
   1. Introduction of faculty and students
   2. Review Syllabus
   3. Review Class Policies
   4. Review Lab & Unit Assignments

B. Process Technology Today
   1. Core Values and Competencies of Today's Workers
   2. Rethinking Process Plant Roles

C. Safety I & II
   1. Common Process Hazards
      a. Pressure
      b. Steam
      c. Air
      d. Water
   2. The Permit System
      a. Hot Work
      b. Lock Out
      c. Tag out
      d. Confined Space

D. Quality
   1. What is Quality
   2. Quality is a Function of The Process

E. Process Economics
   1. Conservation

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2. Avoid Waste
F. Communication
1. The Elements of Good Communication
2. Important Process unit Document
G. Samples & Duties of Process Technician
1. Unit Samples
2. Sample Schedules
3. Routine, Maintenance Duties
H. Material Handling
1. Bulk Liquids I & II
2. Oil Movement & Storage
I. Process Unit
1. Shutdown
2. Turnaround
3. Startup
4. Abnormal
5. Troubleshooting

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:

Activity	**Percentage**
Homework	10%
Tests	40%
Lab	50%

Course Requirements

1. Supply all necessary PPE.
2. Operate all aspects of the unit and controls.
3. ALL students will participate in the 48 hour distillation unit operation regardless of prior or current experience. Additionally, students who are currently in the co-op program will still be expected to participate in the 48 hour run.

Attendance Policy

1. Missing more than 20% of classes will result in an automatic “F” for the course.
2. Absences are counted for unexcused, excused and coming to class late.
3. Missing more than 20% of a class period will count as an absence.
4. Being tardy 2 times equals 1 absence.

Course Policies

1. No food, drinks, or use of tobacco products in class.

2. Beepers, telephones, headphones, and other electronic devices must be turned off while in class.
3. Do not bring children to class.
4. Assignments submitted late will be reduced 10 points each day.
5. If a test is missed due to an emergency situation, the student will have one week to make it up; otherwise a grade of 0 will be assigned. Students are responsible for scheduling the make-up date.
1. 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.
2. 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.

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 online resource: http://www.lit.edu/depts/stuserv/special/defaults.aspx

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.

Course Schedule

Week	Topic	Reference
1	Course introduction and policies • Lecture • Lab	Handouts Chapter 1
2	Safety: Hazards • Lecture: Exercises • Lab: Learn Lab Equipment	Chapter 2 /3
3	Quality as a Tool, Process economics • Lecture: Exercises • Lab: Learn Lab Equipment	Chapter 4
4	Test 1	
5	Communication/Economics • Lecture:- Exercises	Chapter 5/6

	• Lab: Run Distillation Twrs.	
6	Process Physics • Lecture:- Exercises • Lab: Run Distillation Twrs	Chapter7
6	Process Samples/ • Lecture- Exercises • Lab- Start training on outside unit	Chapters 8
7	Test 2	Chapters 5, 6, 7, 8
8	Analytical • Lectures-Exercises • Lab-Training on outside unit	Chapter9
9	Duties: Unit, Maintenance, • Lectures-Exercises • Lab-Training on outside unit	Chapters 10,11,12
10	Test 3	Chapters 9, 10, 11, 12
11	Material Handling • Lectures-Exercises • Lab- Training on outside unit	Chapters13, 14, 15
12	Process Unit Shutdown • Lectures-Exercises • Lab- Training on outside unit	Chapter16
13	Test 4	Chapters 13, 14 15, 16
14	Process Unit • Turnaround Startup	Chapter 17, 18
15	Abnormal Situations, Trouble Shooting • Lecture -Exercises • Lab- Training on outside unit	Chapters 19, 20
16-17	Test 5 • Run Unit • 48 Hour Run & Final	Chapter17, 18, 19