



CTEC-2445-201CL
Unit Operations / ICB Room 101
Spring 2024
Mon/Wed 6pm – 9:50pm

Instructor Information: J. Hartschuh

jhartschuh@com.edu

409-933-8536 – (Patty England)

Student hours and location:

Mon, Wed, Fri 5pm to 6pm ICB Room 101

Required Textbook/Materials:

Pocket Reference by Thomas Glover (Black Book) (ISBN: 978-1-885071-62-0)

PPE:

Safety glasses, gloves, leather shoes (do not have to be steel toe), but no mesh.

Fire Retarded Clothing must be worn during class.

The College will provide you with 2 pairs of FRC's, a hard hat, and hearing protection. You will sign out for the semester, and they must be returned, to receive your grade.

Students not complying with the PPE dress code will be dismissed from class. This will be considered an unexcused absence and any assignments missed will be given a grade of zero.

Course Description: (catalog description)

Unit Operations is the capstone course in the College of the Mainland Process Technology Associate Degree Program. It is a “hands-on” based course that teaches students to understand, operate and troubleshoot the Glycol Distillation Training Unit, Fire Tube Boiler, and related systems. Students will learn to trace lines and draw P&IDs (Piping & Instrumentation Diagrams) and write SOPs (Standard Operating Procedures). Safety and Environmental issues will be stressed and monitored throughout the course. The 6 steps in “real time” troubleshooting will be taught and students will be given the opportunity to troubleshoot the Glycol Separation Unit (GSU).

Course requirements: Students are required to learn in adverse weather conditions. Students must be able to stand, bend, and twist their bodies in uncomfortable positions. Students must be self-motivated and eager to learn the GSU proses.

Determination of Course Grade/Detailed Grading Formula:

The determination of course grade is based on the completion of all Assignments, Quizzes, Exams, and the 40-hour run. It is the responsibility of the student to check Blackboard daily for any announcements/instruction that may be communicated via the instructor. Quizzes are timed and given at the beginning of each class. Assignments, Quizzes and Exams are not allowed to be made up. If you miss an Assignments, Quizzes and Exams, you will be given a grade of 0 for the quiz.

There will be exceptions made for emergency situations (notification through email/office phone) which will be determined by the instructor. Refer to schedule for grading point system.

The 40 Hour Run is mandatory. Each student will be required to do one 12-hour shift and one 8-hour shift in a shift work rotation. Students who do not participate in the 40 Hour Run will receive a grade of F for the course

Grading Scale: Total Points = 1729

A =	1556-1729
B =	1383-1555
C =	1210-1382
D =	1037-1209
F =	Below 1037

Late Work, Make-Up, and Extra-Credit Policy: Assignments, Quizzes and Exams are not allowed to be made up. If you miss an Assignments, Quizzes, or Exams, you will be given a grade of 0. **There will be exceptions made for emergency situations (notification through email/office phone) which will be determined by the instructor. Only 1 makeup will be allowed regardless of the situation.** Refer to schedule for grading point system.

Attendance Policy: Students must be in class on scheduled class days. Students who miss 6 classes during the semester will be dropped from the class. **Please see FN Grading below.**

Communicating with your instructor: ALL electronic communication with the instructor must be through your COM email. Due to FERPA restrictions, faculty cannot share any information about performance in the class through other electronic means. (Faculty may add additional statement requiring monitoring and communication expectations via D2L or other LMS)

Student Learner Outcome	Maps to Core Objective	Assessed via this Assignment
1. Describe and Demonstrate Understanding of Unit Operations concepts	*Critical Thinking *Social Responsibility	Startup, Troubleshoot and Shutdown the PTEC Glycol Separation Training Unit. (GSU)
2. Solve elementary chemical mass/energy balance	*Empirical Skills	Quizzes, Exams
3. Use the interpretation of analytical data in the application of distillation and fluid flow principles	* Critical Thinking	Quizzes, Exams

Academic Dishonesty: Any incident of academic dishonesty will be dealt with in accordance with college policy and the Student Handbook. Academic dishonesty – such as cheating on assignments, quizzes, and exams is an extremely serious offense and will result in a grade of zero and the student will be referred to the Office of Student Conduct for the appropriate discipline action.

Plagiarism: Plagiarism is using someone else's words, drawings or ideas and claiming them as your own. Plagiarism is a serious offense. Plagiarism includes paraphrasing someone else's words without giving proper citation, copying directly from a website, and pasting it into your paper, using someone else's words without quotation marks, or copying someone else's drawings or assignments in part or in full. Any assignment containing any plagiarized material will receive a grade of zero, and the student will be referred to the Office of Student Conduct for appropriate discipline.

Student Concerns: If you have any questions or concerns about any aspect of this course, please contact me using the contact information previously provided. If, after discussing your concern with me, you continue to have questions, please contact Derrick Lewis Department Chair dlewis22@com.edu 409-933-8706

Course outline:

2024 Unit Ops. Spring / 2024 General Schedule								
WEEK #	DAY #	DAY	DATE	TOPICS	DETAILS	QUIZ / EXAM	QUIZ #	PTS
1	1	W	1/17	1st Day of Class: Intro + Syllabus/Schedule + Expectations-issue PPE + P&ID symbols+ Resume package + GSU equipment descriptions				
2	2	M	1/22	Pre-assessment quiz- Lecture: Discuss basic distillation + Processing Unit overview + Basic distillation video (youtube)-quiz	15 Min.		1	50
	3	W	1/24	Lecture: Intro to PSM (14 Elements) + Intro to SWP/LOTO/TOOLS + Review resumes + discuss Mechanical Aptitude test				
3	4	M	1/29	Walkout GSU- Discuss Feed section + SWP/LOTO exercise				
	5	W	1/31	Class Quiz: P&ID Feed section: Review Feed section Walkout GSU- Discuss Bottom section + SWP/LOTO exercise	20 Min.	Quiz at beginning of class	2	53
4	6	M	2/5	Class Quiz: P&ID Bottoms section: Review Bottoms section Walkout GSU- Discuss Overhead section + SWP/LOTO exercise	20 Min.	Quiz at beginning of class	3	75
	7	W	2/7	Lecture: Discuss Troubleshooting principles + exercise Continue to work on P&ID Overhead section + SWP/LOTO exercise Study Time - work on whole GSU P&ID				
5	8	M	2/12	Class Quiz: P&ID Overhead section: Review Overhead section Walkout GSU- Discuss Steam section + SWP/LOTO exercise	20 Min.	Quiz at beginning of class	4	95
	9	W	2/14	Lecture: Discuss Troubleshooting principles + exercise Continue to work on P&ID Steam section + SWP/LOTO exercise Study Time - work on whole GSU P&ID				

6	10	M	2/19	Class Quiz: P&ID Steam section: Review Steam section Walkout GSU- Stand and Point Assessment exercise + Assign Board quiz dates	20 Min.	Quiz at beginning of class	5	64
	11	W	2/21	Lecture: Discuss Troubleshooting principles + exercise Study Time - work on whole GSU P&ID + Board Quiz				
7	12	M	2/26	Turn in Final P&ID & Practice Drawing for Board Quiz + Stand and point assessment + Assign S/P assessment dates		Due at the Beginning of Class		296
	13	W	2/28	GSU Board Quiz	25~30 Min. For each person	Whole Class Time	6	296
8	14	M	3/4	GSU Board Quiz	25~30 Min. for each person.	Whole Class Time		
	15	W	3/6	Lecture: Review Operator round sheets +Discuss Field & Board Operator Duties Review Startup/ Shutdown procedure + Navigate DCS (control board) Study for S/P assessment				
3/11 thru 3/15 SPRING BREAK								
9	16	M	3/18	GSU Stand and Point Assessment		Whole Class Time	7	200
	17	W	3/20	GSU Stand and Point Assessment		Whole Class Time		
10	18	M	3/25	Inside Quiz : GSU Start up & Shutdown (by Students) >> Run Unit	20 Min.	Quiz at beginning of class	8	100
	19	W	3/27	Outside Quiz: GSU Start up & Shutdown (by Students) >> Run Unit	20.Min	Quiz at beginning of class	9	100
11	20	M	4/1	Troubleshooting quiz 6 Steps / GSU Start up & Shutdown (by Students) >> Run Unit	20 Min	Quiz at beginning of class	10	100
	21	W	4/3	GSU Start up & Shutdown (by Students) >> Run Unit				
12	22	M	4/8	GSU Start up & Shutdown (by Students) >> Run Unit				
	23	W	4/10	SWP/LOTO Exercises + Equipment lineup + 3 point contact exercise +		4 Exercises		

				Hose/fitting exercise >> Run Unit				
13	24	M	4/15	PSM quiz:Trouble Shooting - Run Unit		Quiz at beginning of class	11	100
	25	W	4/17	Trouble Shooting - Run Unit				
14	26	M	4/22	Trouble Shooting - Run Unit				
	27	W	4/24	Trouble Shooting - Run Unit				
15	28	M	4/29	Trouble Shooting - Run Unit				
	29	W	5/1	Start 40 Hour Run (4pm to 4am)		Participation in running the unit is Mandatory		100
	30	TH	5/2	Cotinued 40. Hr. Run (4am to 4pm) & (4pm to 4am)				
	31	F	5/3	Continued 40 Hr. Run (Finish up 40 hr. Run) Debrief				
16	32	M	5/6	ROUND TABLE DISCUSSION OF UNIT OPS CLASS (FEEDBACK)				
	33	W	5/8	Final Grades Due		Mandatory		

Schedule is subject to change at the discretion of the instructors.
The instructor reserves the right to make changes to this syllabus & the schedule during the semester as needed to facilitate instruction and/or course needs.

Institutional Policies and Guidelines

Grade Appeal Process: Concerns about the accuracy of grades should first be discussed with the instructor. A request for a change of grade is a formal request and must be made within six months of the grade assignment. Directions for filing an appeal can be found in the student handbook https://www.com.edu/student-services/docs/Student_Handbook_2023-2024_v2.pdf. *An appeal will not be considered because of general dissatisfaction with a grade, penalty, or outcome of a course. Disagreement with the instructor's professional judgment of the quality of the student's work and performance is also not an admissible basis for a grade appeal.*

Academic Success & Support Services: College of the Mainland is committed to providing students the necessary support and tools for success in their college careers. Support is offered through our Tutoring Services, Library, Counseling, and through Student Services. Please discuss any concerns with your faculty or an advisor.

ADA Statement: Any student with a documented disability needing academic accommodations is requested to contact Kimberly Lachney at 409-933-8919 or klachney@com.edu. The Office of Services for Students with Disabilities is located in the Student Success Center.

Textbook Purchasing Statement: A student attending College of the Mainland is not under any obligation to purchase a textbook from the college-affiliated bookstore. The same textbook may also be available from an independent retailer, including an online retailer.

Withdrawal Policy: Students may withdraw from this course for any reason prior to the last eligible day for a “W” grade. Before withdrawing students should speak with the instructor and consult an advisor. Students are permitted to withdraw only six times during their college career by state law. The last date to withdraw from the 1st 8-week session is February 28. The last date to withdraw from the 16-week session is April 22. The last date to withdraw for the 2nd 8-week session is May 1. The last date to withdraw for spring mini session is May 29.

FN Grading: The FN grade is issued in cases of *failure due to a lack of attendance*, as determined by the instructor. The FN grade may be issued for cases in which the student ceases or fails to attend class, submit assignments, or participate in required capacities, and for which the student has failed to withdraw. The issuing of the FN grade is at the discretion of the instructor. The last date of attendance should be documented for submission of an FN grade.

Early Alert Program: The Student Success Center at College of the Mainland has implemented an Early Alert Program because student success and retention are very important to us. I have been asked to refer students to the program throughout the semester if they are having difficulty completing assignments or have poor attendance. If you are referred to the Early Alert Program you will be contacted by someone in the Student Success Center who will schedule a meeting with you to see what assistance they can offer in order for you to meet your academic goals.

Resources to Help with Stress:

If you are experiencing stress or anxiety about your daily living needs including food, housing or just feel you could benefit from free resources to help you through a difficult time, please click here <https://www.com.edu/community-resource-center/>. College of the Mainland has partnered with free community resources to help you stay on track with your schoolwork, by addressing life issues that get in the way of doing your best in school. All services are private and confidential. You may also contact the Dean of Students office at deanofstudents@com.edu or communityresources@com.edu.