



CTEC-2445-201-202C3

UNIT Operations / ICB Room 101

FALL 2025

Mon/Wed/6pm-9:50pm

Instructor Information:

C. Bourgeois

cbourgeois1@com.edu

[J. Hartschuh](#)

jhartschuh@com.edu

Conference hr.:

Mon, Wed, 5p-6p

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 at-least 1 to 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: 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 or Patricia England Admin Assistant penland@com.edu 409-933-8536

Course outline: (include calendar with lecture topics, due dates)

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/student-handbook.html>. 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 with 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 accommodation is requested to contact:

Kimberly Lachney, Student Accessibility Services Coordinator

Phone: 409-933-8919 Email: AccessibilityServices@com.edu

Location: COM Doyle Family Administration Building, 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 October 1. The last date to withdraw from the 16-week session is November 14. The last withdrawal date for the 2nd 8-week session is November 25.

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 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.

Nondiscrimination Statement:

The College District prohibits discrimination, including harassment, against any individual based on race, color, religion, national origin, age, veteran status, disability, sex, sexual orientation, gender (including gender identity and gender expression), or any other basis prohibited by law. Retaliation against anyone involved in the complaint process is a violation of College District policy.

			2025	Unit Ops. Fall 25 General Schedule		CB			
WEEK #	DAY #	DAY	DATE	TOPICS	DETAILS	QUIZ / EXAM	QUIZ #		PTS
1	1	M	8/18	1st Day of Class: Intro + Syllabus/Schedule + Expectations-issue PPE + P&ID symbols+ Resume package + GSU equipment descriptions					
	2	W	8/20	Pre-assessment quiz-Lecture: Discuss basic distillation + Processing Unit overview + Basic distillation video (youtube)-quiz	15 Min.		1		50
2	3	M	8/25	Lecture: Intro to PSM (14 Elements) + Intro to SWP/LOTO/TOOLS + Review resumes + discuss Mechanical Aptitude test/ Walkout GSU (BFD-Basic Flow Diagram)					
	4	W	8/27	Walkout GSU- Discuss Feed section + SWP/LOTO exercise					
3	5	M	9/1	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
	6	W	9/3	Work on Feed / Bottoms sections (Accumulative)+ SWP/LOTO exercise					
4	7	M	9/8	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
	8	W	9/10	Lecture: Discuss Troubleshooting principles + exercise Continue to work on P&ID Overhead section + SWP/LOTO exercise Study Time - work on Feed/Btms and prepare for O/H section quiz			4		100
5	9	M	9/15	Class Quiz: P&ID Overhead section: Review Overhead section Walkout GSU- Discuss Steam section + SWP/LOTO exercise	20 Min.	Quiz at beginning of class	5		95
	10	W	9/17	Review Stand and Point assessment (expectations) Study Time - Work on whole Unit Drawing + prepare for steam section quiz					
6	11	M	9/22	Class Quiz: P&ID Steam section: Review Steam section Walkout GSU- Stand and Point Assessment exercise + Assign Board quiz and S/P assessment dates	20 Min.	Quiz at beginning of class	6		64
	12	W	9/24	Turn in Final P&ID & Practice Drawing on the Board + S/P assessment		Due at the Beginning of Class			296
7	13	M	9/29	Continue to practice on Drawing on Board + S/P assessment					
	14	W	10/1	GSU-Board Quiz	30 Min. For each person	Whole Class Time	7		296
8	15	M	10/6	GSU-Board Quiz	30 Min. for each person.	Whole Class Time			
	16	W	10/8	Start Stand and Point Assessment		Whole Class Time	8		200
9	17	M	10/13	Stand and Point Assessment					
	18	W	10/15	Lecture: Review Operator round sheets +Discuss Field & Board Operator Duties Review Startup/ Shutdown procedure + Navigate DCS (control board) Inside Quiz : GSU Start up & Shutdown (by Students) >> Run Unit	20 Min.	Quiz at beginning of class	9		100
10	19	M	10/20	Outside Quiz: GSU Start up & Shutdown (by Students) >> Run Unit	20.Min	Quiz at beginning of class	10		100
	20	W	10/22	Troubleshooting quiz 6 Steps / GSU Start up & Shutdown (by Students) >> Run Unit			11		100
11	21	M	10/27	GSU Start up & Shutdown (by Students) >> Run Unit					
	22	W	10/29	SWP/ LO/TO-Tools Valve Wrenches - Hoses		4 Exercises			100
12	23	M	11/3	Trouble Shooting - Run Unit					
	24	W	11/5	Trouble Shooting - Run Unit					
13	25	M	11/10	Trouble Shooting - Run Unit					
	26	W	11/12	Trouble Shooting - Run Unit					
14	27	M	11/17	Trouble Shooting - Run Unit					
	28	W	11/19	Trouble Shooting - Run Unit					
15	29	M	11/24/2025	START 40 HR RUN		Participation in running the unit is Mandatory			100
	30	W	11/25	CONT. 40 HR RUN					
	31	TH	11/26	CONT. 40 HR RUN					
16	32	M	12/1	Course Evaluation		Mandatory			
	33	F	12/3	CLASSES ARE DUE					
				7					