



CTEC-2445-111CL

UNIT Operations

Summer 2022

Tues/Thurs 8:30am-2:55pm

TVB 1567C

Instructor Information: Adrian Mejia amejia5@com.edu 409-933-8140

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.

Student hours and location:

A. Mejia: Tues & Thurs.: 7:00am-8:30am

Required Textbook:

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

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.

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, Lattner 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 actually troubleshoot the Glycol Separation Unit (GSU).

Course requirements:

This is based on completion of all Assignments, Quizzes and Exams.

It is the responsibility of the student to keep up on Blackboard assignments and exams. You must use COM email. Quizzes are timed and given at the beginning of each class. Quizzes are not allowed to be made up. If you miss a quiz, you will be given a grade of 0 for the quiz.

Students are required to have proper Personal Protective Equipment (PPE) when operating the GSU/Boiler. Students not having proper PPE will be dismissed from class.

Determination of Course Grade/Detailed Grading Formula (methods of evaluation to be employed to include a variety of means to evaluate student performance):

Course outline: [See Attached](#)

Attendance Policy: Students are required to attend each class. Attendance is taken at the beginning of every class. It is the student's responsibility to make sure their name is entered on the role.

Much of the classwork is done in class and through hands-on training which can't be made up. After two absences a student's name will be submitted to the Early Warning System. **If a student misses six classes, they will be dropped and issued a grade of Fn.**

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

Unit Operations is a "hands-on" course without a textbook or handouts. Class attendance, participation, and good note taking are essential to learning and the successful completion of this class.

If you find that you are going to miss a scheduled class for any reason, please notify both your professors via E-Mail (with cc to Patricia England) as soon as possible. Missed lectures are the responsibility of the student and making contact with fellow classmates is highly encouraged to get details on missed information.

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 10-week session is Aug.2nd2022.

| | |
|----------------|-------------------|
| Grading Scale: | Total Points 1200 |
| A = | 1050-1200 |
| B = | 900-1049 |
| C = | 750-899 |
| D = | 600-749 |
| F = | Below 600 |

40 Hour Run

The 40 Hour Run is mandatory. Each student will spend one 13+ hour shift with their team on the GSU over the 40-hour period. Students who do not participate in the 40 Hour Run will get “I” (Incomplete) for the grade.

Early Alert Program: The Student Success Center at College of the Mainland has implemented an Early Alert Program because student success and retention is 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.

Academic Dishonesty: 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 very 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 the appropriate discipline action.

Student Concerns: If you have any questions or concerns about any aspect of this course, please contact your assigned instructor using the contact information previously provided. If, after discussing your concern with your instructor, you continue to have questions, please contact Mr. Derrick Lewis / (409) 933- 8607 / dlewis22@com.edu).

| 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 |
|---|---------------------|----------------|

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://build.com.edu/uploads/sitecontent/files/student-services/Student_Handbook_2019-2020v5.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.* https://build.com.edu/uploads/sitecontent/files/student-services/Student_Handbook_2019-2020v5.pdf

Academic Success & Support Services: College of the Mainland is committed to providing students the necessary support and tools for success in their college career. 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 Holly Bankston at 409-933-8520 or hbankston@com.edu. The Office of Services for Students with Disabilities is located in the Student Success Center.

Counseling Statement: Any student that is needing counseling services is requested to please contact Holly Bankston in the student success center at 409-933-8520 or hbankston@com.edu. Counseling services are available on campus in the student center for free and students can also email counseling@com.edu to setup their appointment. Appointments are strongly encouraged; however some concerns may be addressed on a walk-in basis.

COVID-19 Statement: All students, faculty and staff are expected to familiarize themselves with materials and information contained on the College of the Mainland's Coronavirus Information site at www.com.edu/coronavirus. Students are required to watch a training [video](#), complete the [self-screening](#), and acknowledge the safety guidance at: www.com.edu/selfscreen. In addition, students, faculty, and staff must perform a [self-screening](#) prior to each campus visit. Finally, students, faculty, or staff which have had symptoms of COVID-19, received a positive test for COVID-19, or have had close contact with an individual infected with COVID-19 must complete the [self-report tool](#).

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.

| WEEK # | DAY # | DAY | DATE | TOPICS | DETAILS | QUIZ / EXAM |
|--------|-------|-----|------|---|---------------------------|-------------|
| 1 | 1 | T | 6/7 | 1st Day of Class: Intro + Syllabus+studying for mechanical aptitude testing | | |
| | 2 | TH | 6/9 | Distillation You tube: Video explaining distillation Review pumps , compressors , valves ,and exchangers. Classroom Lecture:Basic priciples of vacuum distillation. | | |
| 2 | 3 | T | 6/14 | Classroom Lecture: Understanding permits and the different types, valve response. | | |
| | 4 | TH | 6/16 | Classroom Lecture : Understanding lock / Tag out and the importance. Classroom Lecture : Go over Trouble shooting and the six steps | | |
| 3 | 5 | T | 6/21 | Take the Six Steps of Troubleshooting test. Classroom lecture: Going over the 14 elements of PSM | 20 min. Start of class | Quiz #1 |
| | 6 | TH | 6/23 | Classroom lecture: Go over fitting and hoses and creating a Backflow preventer and installing it. Classroom lecture : Go over Key terms and study for key terms test | | |
| 4 | 7 | T | 6/28 | Key Terms Test. Go over the new unit and go over the feed system & bottoms. | 1 hour test | Quiz #2 |
| | 8 | TH | 6/30 | Test over the feed and bottoms system. Go over the overhead and steam system. | 20 min. Start of class | |
| 5 | 9 | T | 7/5 | Test over the overhead system and the steam system. | 20 min. Start of class | |
| | 10 | TH | 7/7 | Test over the whole unit and practice for the Boad Drawing. | 20 min. Start of class | Quiz #4 |
| 6 | 11 | T | 7/12 | Test on Board Drawing. Turn in final drawing. | Whole class | Quiz #6 |
| | 12 | TH | 7/14 | Test over indside steps and outside steps.Both test, time is 40 minutes. | 40 min. Start of class | Quiz #7 |
| 7 | 13 | T | 7/19 | Take the Point and Shoot test, remiander of class time. | Whole class | Quiz #9 |
| | 14 | TH | 7/21 | Run Unit + Trouble Shoot. | | |
| 8 | 15 | T | 7/26 | Run Unit + Trouble Shoot. | | |
| | 16 | TH | 7/28 | Run Unit + Trouble Shoot. | | |
| 9 | 17 | T | 8/2 | Prep for 40 Hr. Rrun | | |
| | 18 | W | 8/3 | 40 Hr. Run | Hands On | |
| | 19 | TH | 8/4 | 40 Hr. Run | Hands On | |
| | 20 | F | 8/5 | 40 Hr. Run | Hands On | |
| 10 | 21 | T | 8/9 | Go over 40 Hr. Run | Hands On | |
| | 22 | Th | 8/11 | Grades | | |