



CTEC-2445-101CL & 102CL
Unit Operations / ICB Room 101
Spring 2024
Tue/Thur 8am-11:50am

Instructor: Tom Forester
Email: tforester2@com.edu
Phone: 409-933-8159

Student hours and location:

Office Room 207-9

Office Hours: **MON/WED 4:00 PM – 6:00 PM**
T/TH 7:00 AM to 8 AM

PPE: Safety glasses, gloves, leather shoes, doesn't have to be steel toes, but no mesh. Fire Retarded Clothing must be worn during class. The College will provide you with 1 pair of FRC's. You will sign out for the semester, and they must be returned, to receive your grade. Hard hats will also be provided by the college. Hearing protection will also be provided. **Students who are not in compliance 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, 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 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 any Assignments, Quizzes and Exams, you will be given a grade of 0. There will be exceptions made for emergency situations 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 1730
A =	1557-1730
B =	1383-1556
C =	1209-1382
D =	1035-1208
F =	Below 1035

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 which will be determined by the instructor. Refer to schedule for grading point system.

Attendance Policy: Students are required to 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.

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 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 appropriate discipline action.

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.

<u>WEEK</u>	<u>DAY</u>	<u>DAY</u>	<u>DATE</u>	<u>TOPICS</u>	<u>DETAILS</u>	<u>QUIZ / EXAM</u>	<u>QUIZ #</u>	<u>POINTS</u>

Course outline: See attached.

<u>1</u>	<u>1</u>	<u>T</u>	<u>1/16</u>	1st Day of Class: Intro + Syllabus + Expectations-issue PPE/resumes/GSU description				
	<u>2</u>	<u>TH</u>	<u>1/18</u>	Pre-assessment quiz-Lecture: Discuss basic distillation + Processing Unit overview + Basic distillation video (youtube)-quiz	15 min	<u>Quiz1</u>		50
<u>2</u>	<u>3</u>	<u>T</u>	<u>1/23</u>	Lecture: Intro to PSM (14 Elements) + Intro to SWP/LOTO/TOOLS + Review resumes + discuss Mechanical Aptitude test				
	<u>4</u>	<u>TH</u>	<u>1/25</u>	Walkout GSU- Discuss Feed section + SWP/LOTO exercise				
<u>3</u>	<u>5</u>	<u>T</u>	<u>1/30</u>	Walkout GSU- Discuss Bottom section + SWP/LOTO exercise Quiz = feed section	20 min	<u>Quiz 2</u>		50
	<u>6</u>	<u>TH</u>	<u>2/1</u>	Class Quiz: P&ID Bottoms section: Review Bottoms section Walkout GSU- Discuss Overhead section + SWP/LOTO exercise Quiz = bottom section	20 min	<u>Quiz 3 at beginning of class</u>		75
<u>4</u>	<u>7</u>	<u>T</u>	<u>2/6</u>	Lecture: Discuss Troubleshooting principles + exercise Continue to work on P&ID Overhead section + SWP/LOTO exercise Study Time - work on whole GSU P&ID				
	<u>8</u>	<u>TH</u>	<u>2/8</u>	Class Quiz: P&ID Overhead section: Review Overhead section Walkout GSU- Discuss Steam section + SWP/LOTO exercise Quiz = overhead section	20 min	<u>Quiz 4 beginning of class</u>		95
<u>5</u>	<u>9</u>	<u>T</u>	<u>2/13</u>	Lecture: Discuss Troubleshooting principles + exercise Continue to work on P&ID Steam section + SWP/LOTO exercise Study Time - work on whole GSU P&ID				
	<u>10</u>	<u>TH</u>	<u>2/15</u>	Class Quiz: P&ID Steam section: Review Steam section Walkout GSU- Stand and Point Assessment exercise + Assign Board quiz dates Quiz=steam section	20 min	<u>Quiz 5 beginning of class</u>		65

<u>6</u>	<u>11</u>	<u>T</u>	<u>2/20</u>	Lecture: Discuss Troubleshooting principles/exercise Study Time - work on whole GSU P&ID + Board Quiz	—			
	<u>12</u>	<u>TH</u>	<u>2/22</u>	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		<u>295</u>
<u>7</u>	<u>13</u>	<u>T</u>	<u>2/27</u>	Board Quiz	30 Min	Whole Class Time	<u>6</u>	<u>295</u>
	<u>14</u>	<u>TH</u>	<u>2/29</u>	Board Quiz	30 Min	Whole Class Time	<u>6</u>	<u>295</u>
<u>8</u>	<u>15</u>	<u>T</u>	<u>3/5</u>	Lecture: Review Operator round sheets +Discuss Field & Board Operator Duties Review Startup/Shutdown procedure + Navigate DCS (control board) Study for S/P assessment	—			
	<u>16</u>	<u>TH</u>	<u>3/7</u>	Continue Stand and Point Assessment	25 Min	Whole Class Time	<u>7</u>	<u>200</u>
<u>9</u>	<u>17</u>	<u>T</u>	<u>3/19</u>	GSU Stand and Point Assessment	20 Min.	Quiz at beginning of class	<u>7</u>	<u>200</u>
	<u>18</u>	<u>TH</u>	<u>3/21</u>	Inside Quiz : GSU Start up & Shutdown (by Students) >> Run Unit	20 Min	Quiz at beginning of class	<u>8</u>	<u>100</u>
<u>10</u>	<u>19</u>	<u>T</u>	<u>3/26</u>	Outside Quiz: GSU Start up & Shutdown (by Students) >> Run Unit	20 Min	Quiz at beginning of class	<u>9</u>	<u>100</u>
	<u>20</u>	<u>TH</u>	<u>3/28</u>	Troubleshooting quiz 6 Steps / GSU Start up & Shutdown (by Students) >> Run Unit	—	Quiz at beginning of class	<u>10</u>	<u>100</u>
<u>11</u>	<u>21</u>	<u>T</u>	<u>4/2</u>	GSU Startup & Shutdown (by Students) >> Run Unit	—			

	22	TH	4/4	GSU Start up & Shutdown (by Students) >> Run Unit				
12	23	T	4/9	Go over PSM – Run Unit				
	24	TH	4/11	PSM quiz: Trouble Shooting - Run Unit	30 Mi n	Quiz at beginnin g of class	1 1	100
13	25	T	4/16	Run Unit/ GSU Procedure				
	26	T H	4/18	Trouble Shooting - Run Unit				
14	27	T	4/23	Trouble Shooting - Run Unit				
	28	TH	4/25	Trouble Shooting - Run Unit				
15	29	F	4/30	Prepare for 40 hr run				
	30	S	5/2	40 hour run		Class Participa tion Grade	1 2	150
16	31	T	5/6	Discuss 40 hr. Run/ Final Grades Due				
	32	TH	5/10	Final grades due				

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://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.*

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 at 409-933-8919 or klachney@com.edu. The Office of Services for Students with Disabilities is 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 October 11. The last date to withdraw from the 16-week session is November 28. The last date to withdraw for the 2nd 8-week session is December 7.

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.