Course Number and Section (PTAC-2346-111C3)
Name of Course (Process Troubleshooting)
Course Semester (Spring 2025)
ICB Room 219

Tuesday and Thursday from 1:00 – 3:50 PM

Instructor: **Dennis Link**
dlink@com.edu
Mobile: 409-948-9538

Communicating with your instructor: All electronic communication with the instructor must be through your COM email. Due to Family Educational Rights and Privacy Act (FERPA) restrictions, faculty cannot share any information about performance in the class through other electronic means.

Student Hours and Location: Available from 4:00 – 5:30 PM on Tuesday and Thursday throughout semester. Also available by email, text or phone call as requested throughout semester.

Required Textbook:
Troubleshooting for Process Technicians
Author: Kukuk
ISBN: 2818560049296

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:
This course provides instruction in the different types of troubleshooting techniques, procedures, and methods used to solve process problems. Topics include application of data collection and analysis, cause-effect relationships, and reasoning. Students will explain steps in troubleshooting models; demonstrate use of troubleshooting tools; and apply troubleshooting techniques to process problems using combination of in class group assignments, homework and hands-on simulator and lab activities.

Student Learner Outcomes:
On successful completion of this course students will be able to:

1. Collect data and identify techniques for troubleshooting.
2. Utilize applicable troubleshooting methods to solve process problems.
3. Diagnose malfunction or abnormality associated with process problems.
4. Remedy equipment/process malfunction associated with plant problems.

General Education Core Objectives: Students successfully completing this course will demonstrate competency in the following Core Objectives:

1. Reading: Ability to analyze & interpret a variety of language based & media materials
2. Writing: Competency is the ability to produce clear, correct, & coherent prose adapted to purpose, occasion & audience
3. Speaking: Competency is the ability to communicate orally in clear, coherent & persuasive language adapted to purpose
4. Listening: At the college level is the ability to analyze & interpret various forms of auditory expression
5. Critical Thinking: Embraces methods for applying qualitative skills analytically to subject matter to evaluate arguments & to construct alternate strategies
   Creativity: Means novel product, activity or interaction demonstrating originality &/or flexibility
6. Computer Literacy: is the ability to use & apply technology in communicating, problem solving, acquiring & processing information
7. Mathematical Literacy: Ability to apply mathematical tools including technology to develop, solve, & interpret mathematical models
8. Cultural Competence: Ability to develop & demonstrate awareness, knowledge, attitudes, & skills necessary to interact in a diverse & globally interdependent world

Student Learner Outcome	**Maps to Core Competencies**	**Assessed via this Assignment**
Collect data and identify techniques for troubleshooting	Communication	Reading comprehension assessed via testing
Utilize applicable troubleshooting methods to solve process problems	Critical Thinking	Word Problems during class, on homework and on tests
Work in self-directed teams	Teamwork	Interacting with classmates to troubleshoot and solve process problems

Attendance Policy:
Students are required to be in class on scheduled class days. If you have to miss a scheduled class for any reason, please contact instructor **BEFORE** start of class explaining reason for absence. Students who miss six (6) class periods during the semester will be dropped from the class. Please see **FN Grading** section below for further attendance-related information.
Withdrawal Policy:
Students may withdraw from this course for any reason prior to the last day for a "W" grade. Before withdrawing students should speak with the instructor and consult an advisor. Students are only permitted to withdraw six times during their college career by State law. The last day to withdraw for this class is April 21, 2025.

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 Warning 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 Warning 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.

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

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

Student Concerns: If you have any questions or concerns about any aspect of this course or if extenuating circumstances arise causing you to miss class, please contact instructor using the contact information previously provided. If, after discussing your concern with instructor, you continue to have questions, please contact Process Technology Department Chair, Derrick Lewis, at **dlewis22@com.edu** or 409-933-8607.

Course Conduct Policy: College of the Mainland requires that students enrolled at COM be familiar with the Standards of Student Conduct, which can be found in the online Student Handbook **http://www.com.edu/student-services/student-handbook.php.** Students should always act in a professional manner. Disruptive students will be held accountable according to college policy. Any violations of the Code of Conduct will result in a referral to the Office for student Conduct and may result in dismissal from this class.

***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. 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. Instructions for filing an appeal can be found in the student handbook by accessing the following "link": **<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 with 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 Kimberly Lachney at 409-933-8919 or **assessibilityservices@com.edu.** The Office of Services for Students with Disabilities is in the COM Doyle Family Administration Building, Student Success Center.

Counseling Statement: Any student that needs counseling services is requested to please contact the student success center at 409-933-8618**.** Counseling services are available on campus in the student center for free and students can also email **counceling@com.edu** to setup their appointment. Appointments are strongly encouraged.

Occupational License Eligibility; IMPORTANT: Eligibility for an occupational license may be impacted by one's criminal history. Students with a criminal history should confer with faculty or the department chairperson. Students have a right to request a criminal history evaluation letter from the applicable licensing agency.

Course information available through Brightspace throughout semester:

1. Course syllabus and support documents
2. Chapter slide packs
3. All quizzes and partial exams for designated timeframes based on due dates.
4. Current grades

Course requirements (including description of any special projects or assignments):

1. Each student will be assigned to lead one Safety-related discussion during semester
2. A short quiz will be given at the beginning of each chapter covering first one or two sections of the chapter.
3. All quizzes will be completed in classroom.
4. Exams will be completed in classroom.
5. Each of the two exams will include a required drawing covering the applicable Chapters, at least two troubleshooting problems to solve using provided worksheets, and two simulator-based troubleshooting scenarios.

Make-Up Policy: No make-up quizzes or exams are allowed. A **grade of zero** will be given for any quiz or test not completed by the deadline unless special arrangements are made with instructor **BEFORE** scheduled due date of quiz or exam.

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

Grading Components:		**Grading Scale:**
Six Quizzes:	15% or 150 points	90-100% = A
Two Exams:	60% or 600 points	80-90% = B
Fifteen Homework Assignments	15% or 150 points	70-79% = C
Ten Simulator Drawings	10% or 100 points	60-69% = D
Total:	**100% or 1000 points**	0-59% = F

Homework Grade: Homework is the key part of student's success in this course with each student starting the semester with 150 points. Students will **lose 10 points** of their homework grade each time they do not turn in a completed homework assignment by due date. Preferred methods to send in homework assignments are face-to-face in class or through my com email at dlink@com.edu.

Simulator Drawings: Ten simulator drawings will be assigned throughout the semester. These drawings will include a Process Flow Diagram that includes all key equipment, process indicators and control loops, including control mode, setpoint values and valve output positions. Students will start the semester with 100 points for Simulator Drawings and **lose 10 points** for each drawing not properly completed by due date.

Bonus Points Added to Homework Grade:
Completing all 15 Homework Assignments and 10 Simulator Drawings by due date, and attending all class meetings throughout semester: **40 Bonus Points added at end of semester.**

Success Tips for Students:

1. Active, regular participation in classes strongly encouraged.
2. Completion of all homework assignments, quizzes, and exams prior to due date.
3. Practice Chapter drawings prior to exams.
4. Utilize simulator and lab activities to enhance troubleshooting skills.
5. Thorough review of applicable objectives, notes, slides, lessons and exercises prior to quizzes and exams.

Course outline 16 Week Calendar January 14 – May 8, 2025*

Week #	Dates	Topic	Assignments	Due Date
1	Week of January 14	Review course objectives, expectations and syllabus; Chapter 1 Basic Process Troubleshooting	Review Syllabus Read Chapter 1 Review Chapter 1 Slide Pack	1/16
2	Week of January 21	Complete Chapter 1	Chapter 1 Quiz Lesson 1.2 Homework #1 Tank Simulator Drawing & Activity #1	1/21 1/23
3	Week of January 28	Chapter 2 Decanter System	Read Chapter 2 and Review Slide Pack Lesson 2.2 Homework #2 Chapter 2 Quiz Exercise 2.2 & 2.3 Homework #3 & #4	1/28 1/30
4	Week of February 4	Complete Chapter 3 Reactor System	Read Chapter 3 and Review Slide Pack Lesson 3.2 Homework #5 Chapter 3 Quiz Exercise 3.2 Homework #6	2/4 2/6
5	Week of February 11	Chapter 3 Reactor System and Simulator Activities	Reactor Simulator Drawing & Activity #2 Exchanger Simulator Drawing & Activity #3 Furnace Simulator Drawing & Activity #4 Compressor Simulator Drawing & Activity #5	2/11 2/13
6	Week of February 18	Chapter 4 Steam Generation System	Read Chapter 4 and Review Slide Pack Lesson 4.2 Homework #7 Chapter 4 Quiz Exercise 4.2 Homework #8	2/18 2/20
7	Week of February 25	Review Chapters 1 – 4	Steam Generation Simulator Drawing & Activity #6 Chapters 1 – 4 Mid Term Exam	2/25 2/27
8	Week of March 4	Chapter 5 Distillation	Read Chapter 5 and Review Slide Pack Lesson 5.2 Homework #9 Chapter 5 Quiz Distillation Worksheet HW #10 Distillation Simulator Drawing and Activity #7	3/4 3/6
	Week of March 11	Spring Break		
9	Week of March 18	Continue Chapter 5	Exercise 5.1 Homework #11 Lab Hand Tools Activity	3/18 3/20
10	Week of March 25	Continue Chapter 5	Advanced Distillation Simulator Drawing and Activity #8	3/25
11	Week of April 1	Complete Chapter 5	Exercise 5.2 Homework #12 Atmospheric Crude Distillation Simulator Drawing and Activity #9	4/1 4/3
12	Week of April 8	Simulator Models Troubleshooting Scenarios	Various Simulator Activities	4/8 4/10
13	Week of April 15	Simulator Models Troubleshooting Scenarios	Various Simulator Activities	4/15 4/17

14	**Week of April 22**	**Chapter 6 Absorption and Stripping System**	**Read Chapter 6 and Review Slide Pack** **Lesson 6.2 Homework #13** **Chapter 6 Quiz** **Exercise 6.2 Homework #14**	**4/22** **4/24**
15	**Week of April 29**	**Continue Chapter 6**	**Exercise 6.3 Homework #15** **Absorption and Stripping Simulator Drawing and Activity #10**	**4/29** **5/1**
16	**Week of May 6**	**Review Chapters 5 and 6**	**Chapters 5 and 6 Final Exam**	**5/8**

***Schedule is subject to change at discretion of instructor**