



## Process Technology Program Troubleshooting Syllabus (PTAC 2446)

### Class Description

PTAC 2446 – Troubleshooting - Semester Fall 2018

Class Number & Time:

1. 12295 Monday (8:00 AM -2:00 PM)
2. 12296 Tuesday (5:00 PM-9:00 PM)

Class Location: STECH 108

Textbook: Process Technology Troubleshooting 1st Edition by Charles E. Thomas, ISBN-13: 978-1428311008

### Prerequisites

PTAC 2420 or Department Approval

### Course Description (WECM)

Instruction in the different types of troubleshooting techniques, procedures, and methods used to solve process problems.

Credit: 4 (3 Hours Lecture, 3 Hours Lab), 96 Hour

### Course Outcomes (WECM)

Collect data and identify techniques for troubleshooting. Utilize applicable troubleshooting methods to solve process problems.

### Learning Outcomes (NAPTA)

1. Discuss how equipment and/or instrument malfunctions may affect a system.
2. Discuss the domino affect between inter-related systems (how a malfunction in one system affects another system).
3. Demonstrate the ability to identify a problem through monitoring instruments and equipment (collecting data) and communicate effectively.
4. Demonstrate the ability to use troubleshooting steps and tools to identify the most likely cause(s) and take corrective action(s).
5. Given a scenario (paper, simulator, trainer, etc.) with a problem, demonstrate the ability to utilize troubleshooting tools and steps to identify most likely cause(s) and take corrective action(s).

Process Technology program at Houston Community College Northeast is an associate member of North America Process Technology Alliance (NAPTA):

<http://test.naptaonline.org/index.php>

Process Technology program at HCC-NE complies with NAPTA recommended course topics and objectives:

[http://test.naptaonline.org/app/learning/topics\\_objectives](http://test.naptaonline.org/app/learning/topics_objectives)

### Process Technology Program Outcomes

Upon graduation, students will be able to describe:

1. Industrial Instrumentation
2. Industrial Equipment and Systems



## Process Technology Program Troubleshooting Syllabus (PTAC 2446)

3. Process Safety and Quality
4. Process Operation and Troubleshooting

### Instructor Information

Sazar A. Ali

Email: [sazar.ali@hccs.edu](mailto:sazar.ali@hccs.edu)

Office: (713) 718-2137

Cell: (832) 404-6966

Office Hours/Location: Room 100 – 1 hour before night class and 1 hour after day class.

**NOTE:** The instructor reserves the right to modify the syllabus, course requirements, assignments, grading procedures, and other related policies as changes take place during the semester however, proper notice will be given.

### Course Calendar

Meeting	Chapter
1	SPM-100 Tank Farm
2	SPM-800 Centrifugal Pump
3	SPM-1400 Centrifugal Compressor
4	SPM-1010 Cooling Tower
5	SPM-1200 Fired Heater
6	SPM-2100 Continuous Stirred Tank Reactor (CSTR)
7	SPM-2300 Fixed Bed Reactor
8	Test 1
9-11	SPM-700 Binary Distillation Unit
12	Test 2
13-15	SPM-2500 Atmospheric Distillation Unit
16	Test 3
17-19	SPM- 2600 Vacuum Distillation Unit
20	Test 4
21-23	SPM- 2700 ADU/VDU
24	Test 5
25-32	Project

### Lab Requirements

There will be a series of exercises to demonstrate process variables and troubleshooting concepts.

### Course Content



## Process Technology Program Troubleshooting Syllabus (PTAC 2446)

Hands-on training on process simulation modules.

### Course Assignments

Assignments, test review material, and homework will be given every week.

### Course Grading

Test 1:	15%	Test Material (SPM-2300)
Test 2:	15%	Test Material (SPM-700)
Test 3:	15%	Test Material (SPM-2500)
Test 4:	15%	Test Material (SPM-2600)
Test 5:	15%	Test Material (SPM-2700)
Home Work:	5%	
Project:	10%	
Attendance:	10%	

### Course Grading Scale

A = 90 - 100%
B = 80 - 89%
C = 70 - 79%
D = 60 - 69%
F = 0 - 59%

### Additional Course Information

I can help with tutoring during weekdays by appointment or before the exam to allow you ask any questions you may have. These sessions will not take place unless requested and occur at Codwell campus.

### Electronic Devices

I allow computers and tablets for class learning purposes only, but once this privilege is abused, I reserve the right to no longer allow computers in class. Cell phones and texting will not be allowed in class. Use of recording devices, including camera phones and tape recorders without approval is **prohibited** in classrooms, laboratories, faculty offices, and other locations where instruction, tutoring, or testing occurs.

### Learning Web

If needed, I will post course materials on the HCC learning web (Canvas) found on the HCC homepage.

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### HCC Policies

#### ADA Policy

If you have any special needs which affect your ability to learn in this class, please inform me. Appropriate steps will be taken to assist you with your needs. Any student with a documental disability (physical, learning, psychiatric,



## Process Technology Program Troubleshooting Syllabus (PTAC 2446)

vision, hearing, etc.) who needs to arrange reasonable accommodations must contact the ADA counselor at the beginning of each semester. There is a Disability Support Services Office at each campus. To find the name of the ADA counselor at your campus, visit [www.hccs.edu](http://www.hccs.edu), then click future students, scroll down the page and click on the words Disability Information. Faculty members are authorized to provide only the accommodations requested by the Disability Support Services Office.

### Title IX of the Education Amendments

Title IX of the Education Amendments of 1972 requires that institutions have policies that protect students' rights with regard to sex/gender discrimination. Information regarding these rights are in the HCC website under Students-Anti-discrimination. Students who are pregnant and require accommodations should contact any of the ADA Counselors for assistance.

### Student Rights and Responsibilities

It is important that every student understands and conforms to respectful behavior while at HCC. Sexual misconduct is not condoned and will be addressed promptly. Know your rights and how to avoid these difficult situations. Log in to [www.edurisksolutions.org](http://www.edurisksolutions.org) Sign in using your HCC student e-mail account, then go to the button at the top right that says **Login** and enter your student number.

### Scholastic Dishonesty

HCCS students are responsible for conducting themselves with honor and integrity in fulfilling course requirements. Penalties and/or disciplinary proceedings may be initiated by HCC System officials against a student accused of scholastic dishonesty.

"**Scholastic dishonesty**" includes, but is not limited to, cheating on a test, plagiarism, and collusion. Cheating on a test includes but is not limited to: **Copying from another student's test paper**; using unauthorized materials during a test, **unauthorized collaboration with another student during a test**; knowingly using, buying, selling, stealing, transporting, or soliciting in whole or part the contents of a test; and bribing another person to obtain a copy of a test. Plagiarism includes the appropriation of another's work and the unacknowledged incorporation of that work in one's own written work. Collusion includes the unauthorized collaboration with another person in preparing written work.

### Attendance

Students are expected to attend theory lectures, participate in tests, practical or examinations and perform their laboratory tasks when necessary. **Any student, who is absent more than 12.5% of the class and lab combine, will be automatically withdrawn from the course.** See the student handbook, Course Schedule, or Catalog for details. Drops and withdrawals are the student's responsibility. (The instructor will not be responsible for drops or withdrawals). I will not drop you from this class but please know your exam and quiz grades tend to reflect your attendance. As reading the notes alone is not enough to do well in this course.

You are expected to attend class and participate in the class discussions. As well as arrive on-time, and stay throughout the class. **\*\*\*Attendance will be taken every single class\*\*\*** It is your responsibility to sign in every day. **Students will not be tolerated for disruptions in the class.** This is not limited to: cell phone use, talking and



## **Process Technology Program Troubleshooting Syllabus (PTAC 2446)**

sleeping. You will be asked to leave and marked absent. Once again, **NO CELL PHONES IN CLASS.**

### **Withdrawals**

Students who take a course for the third time or more must now pay significant tuition/fee increases at HCC and other Texas public colleges and universities. At HCC, it is an additional \$50 per credit hour. If you are considering course withdrawal because you are not earning passing grades, confer with your instructor/ counselor as early as possible about your study habits, reading and writing homework, test-taking skills, attendance, course participation, and opportunities for tutoring or other assistance that might be available.

### **Repeating Courses**

As a result of recent Texas legislative changes, please be advised that HCC is charging additional tuition for students who enroll in the same class three or more times at HCC. While it is the hope of HCC that students will be successful in their first attempt at classes, we realize that life demands, academic struggles, and other issues may result in students needing to take the same class more than once. Speaking with an advisor will help you develop student success skills, improving your overall academic performance. If a student repeats a course in which a grade (A-F) has been received, the highest grade received at HCC is the permanent grade for the course and will be used in computing the GPA. All grades earned in a given course will be reflected on the transcript. Other colleges may compute the GPA differently than HCC.

### **HCC Student Handbook**

Please note that it is each student's responsibility to read and be familiar with the HCC Student Handbook. Please see:

<http://central.hccs.edu/students/student-handbook/>

### **Academic Honesty**

The Process Technology Department and specifically this instructor, follows the HCCS policies on scholastic dishonesty, which includes, but is not limited to, cheating on a test, plagiarism, and collusion. See the HCCS student handbook for a more detailed explanation.

### **HCC Public Emergency Plan**

Every member of the Houston Community College community should understand his or her role in emergency situations. All faculty, staff, and students should review this plan so they can support their colleagues should an emergency arise.

Evacuation routes and assembly areas are posted throughout the campus(s). If you are faced with a situation that requires evacuation, proceed in an orderly fashion to the designated assembly area. If a situation arises that requires you to shelter-in-place, you will be given instructions to proceed to a designated area, do not leave the building.

**In Case of Emergency Dial 911 or call HCC Police at 713-718-8888 for faster dispatch time.** To update your emergency contact information, log into PeopleSoft on the Student Sign-Ins page. The "Run. Hide. Fight." Videos provide the information you need to survive an active shooter event.



## Process Technology Program Troubleshooting Syllabus (PTAC 2446)

Please follow the link for more information;

<http://www.hccs.edu/district/departments/police/crime-prevention--safety/hcc-public-emergency-plan/>

### **Discrimination**

Students should be aware that discrimination and/or other harassment based on race, sex, gender identity and gender expression, national origin, religion, age, disability, sexual orientation, color or veteran status is prohibited by HCC Policy G.1 Discrimination and Harassment and D.1.1 Equal Educational Opportunities. Any student who feels they have been discriminated against or harassed on the basis of race, sex, gender identity, gender expression, national origin, religion, age, disability, sexual orientation, color or veteran status including sexual harassment, has the opportunity to seek informal or formal resolution of the matter. All complaints/concerns should be directed to the Office of Institutional Equity, 713 718-8271 or [oi@hccs.edu](mailto:oi@hccs.edu). Additional information may be obtained online. Visit <http://www.hccs.edu/district/departments/institutionalequity/>

Complaints involving sexual misconduct to include but not limited to: sexual assault, stalking, dating violence, sexual harassment or domestic violence should be directed to the HCC Title IX Coordinator, Renée Mack at 713 718-8272 or [renee.mack@hccs.edu](mailto:renee.mack@hccs.edu)

### **EGLS3 – Evaluation for Greater Learning Student Survey System**

At Houston Community College, professors believe that thoughtful student feedback is necessary to improve teaching and learning. During a designated time, you will be asked to answer a short online survey of research-based questions related to instruction. The anonymous results of the survey will be made available to your professors and division chairs for continual improvement of instruction. Look for the survey as part of the Houston Community College Student System online near the end of the term.

### **Campus Carry Law (SB11 2015)**

At HCC the safety of our students, staff, and faculty is our first priority. As of August 1, 2017, Houston Community College is subject to the Campus Carry Law (SB11 2015). For more information, visit the HCC Campus Carry web page at <http://www.hccs.edu/district/departments/police/campus-carry/>