



Syllabus – Instrumentation - Spring 2018- 53015

Instructor Information

Dr. Azita Ahosseini

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Office Hours : Wednesdays 2 – 5 PM, Thursdays 11AM - 2 PM

Office Location: Science and Engineering Building, Room#100

Office Phone Number : 713-718-2133

Fax Number : 713-718-5760

Course Information

Name: PTAC 1332 Process Instrumentation I (Lecture / Laboratory)

Number: 53015

Credit: 3 hours

Class Location: Science and Engineering Building, Room # 211

Class Time: Thursdays (2.00 PM – 4:50 PM)

Course Description

Study of the instruments and control systems used in the process industry including terminology, process variables, symbology, control loops, and basic troubleshooting.

Course Goals

Instruct and teach fundamental aspects of Instrumentation to students in order to be used in control processes. Learn the use of Symbols to identify Instrumentation on Process & Instrumentation Diagrams, Process Flow Diagrams, and Instrument Loops. How Temperature, Pressure, Level, Flow and Analytical properties are controlled using simple and advanced control schemes. Introduce instrumentation troubleshooting methods to students.



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NAPTA Course Learning Outcomes

Using knowledge of symbols, process diagrams and instrumentation, sketch a simple process diagram, including control loops. Describe the various process variables (flow, level, pressure, temperature, analytical, etc.) found in a plant and explain how instruments are used to sense, measure and transmit this information to the control system. Identify the types of control loops (simple and complex) and explain their operation. Identify the components of a closed control loop (primary element, transmitter, controller, transducer, final element) and explain their interrelationships. Identify typical instrument malfunctions found in control loops and explain how they may affect a process (cause and effect).

End-of-Course Outcomes

Explain the function of the various instruments used in the process industry; diagram the process control elements in a control loop; and utilize terms and symbols in instrumentation; and interpret process flow diagram and piping and instrumentation drawing.

Textbook Information

Instrumentation

By: Center for the Advancement of Process Technology – CAPT

ISBN: 0-13-700413-3

Pearson Publishing Company

A Hard Copy of the book is needed for tests because no electronic devices are allowed during the test.

Attendance and Withdrawal Policies

Students are expected to attend all the theory lectures, participate in tests or quizzes and perform their assignments, home-work and laboratory tasks (if applicable) or when necessary. Any student, who is absent more than 12.5% of the class and lab combined, will be told to withdraw 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).

Based on the State Funding rules for spring and fall semesters attending to the class for the first two sessions are mandatory. For summer semesters all students must attend to the class for the first day. Students who don't follow these rules will automatically be dropped from the course.



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Course Requirements and Grading Policy

A = 90 - 100%
B = 80 - 89%

C = 70 - 79%
D = 60 - 69%
F = 0 – 59%

Class Schedule

The following plan table is the estimation of the class weekly work, and it is subjected to be changed:

| Month | Date | | | | |
|----------|---|---|---|--|---|
| January | 18 | 25 | | | |
| | Syllabus – Instructor’s Expectations and experiences Students expectations and experiences ----- Chapter 1 | CH 12 Video Tape or P&ID Checking your knowledge Class Activities Assign HWA# 1 on D1(4pts) | | | |
| February | 1 | 8 | 15 | 22 | |
| | Chapters 2&3 Checking your knowledge Assign Groups For class and project activities Work On HWA #1 Assign HWA#2(4pts) on D2 For symbols | Chapters 4&5&8 Checking your knowledge Assign Group Projects Work on HWA#2 on D2 For symbols Assign HWA#3(4pts) on loops for D1 | Chapters 6&7&8 Checking your knowledge. Class Activities HWA#3 Due Work on HWA#3 (4pts) on loops for D1 | Chapter 8 Checking your knowledge Review for midterm exam | |
| March | 1 | 8 | 15 | 22 | 29 |
| | Midterm Exam (1 to 8 and 12) Closed Book (20 pts) | Chapters 9&10 Checking your knowledge Assign HWA#4 on Cascade loops for D2(4pts) |  | Chapter 11 Checking your knowledge Work on HWA#4 on Cascade loops for D2 Assign HWA # 5 on chapter 13(4pts) | Chapter 13 Group Project Reports Submission (10pts) Hard Copy and Electronic Version Lab 105 Tour |
| April | 5 | 12 | 19 | 26 | |
| | Group Project Presentations (10pts) | SIMTRONICS LAB (2pts) | LAB TOUR 231 LAB ACTIVITIES (1) (4pts) | LAB TOUR 231 LAB ACTIVITIES (2) (4pts) | |
| May | 3 | 10 | | | |
| | Review For Final Exam | Final Exam (20pts) | | | |

Make-up policy

Only 1 make-up test will be allowed, and only due to an official excuse. But, the Instructor reserves the right to make more than one depending on the circumstances.



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Other Student Information (clubs, tutoring, web resources, etc.)

Tutoring, library literature and web resources will be provided to students during the semester as needed.

Course Calendar with Reading Assignment

- **Final Term Exam will be mandatory** and on the last semester's day or within the final examinations' period at the Instructor discretion. Students must wait to get their grades when they are Officially Posted.

- The distribution of the whole grade will be as follows:
 - Homework Assignments (HWAs) 20%
 - Class activities (questions and answers), watching video tapes, Attending Industrial workshop and lab visit) 20%
 - Midterm Exam 20%
 - Group Project (one project) 20%
 - Final Term Exam 20%
 - **Total** 100%

Course Content – Reading Assignments

Homework assignments will be given out at the end of each class and is (are) due the following class. In order for the Students to better participate in class the Students should read the chapter(s) before class. They should also watch the video(s) pertaining to the chapter(s) as directed by the Instructor.

Homework Assignments (HWAs)

- HWAs are assigned from the first session and may continue during the semester. Each assignment will be explained by instructor during the PowerPoint Presentation and students will have access to this PowerPoint Presentations through their emails and /or CANVAS.
- Totally one group project will be assigned for students during the semester and the format and detail will be given through the PowerPoint Presentation.



Important Notes

- The Instructor reserves the right to modify the syllabus, course requirements, assignments, homework, grading procedures and any other related policies as changes take place during the semester. However, proper verbal notice will be given to Students in the class.
- The Instructor is available for Student consultation, support, and help according to the rules and regulations after the class or via Instructor's official email.
- HCC is a college institute and **professional behavior** is expected while on campus between the students and Instructor and/or between the students themselves.
- All the HCC rules and regulations will be applied in the semester, and for all courses/classes.
- Any Student's attempt to cheat or actual cheating alone or with another student will be given ZERO and dismissed from the class. Additionally, a report will be written against they/them and submitted to the appropriate HCC officials, and all the other related HCC rules will be applied.
- Some of the quizzes and exams during the semester may be done by SCANTRON Sheets-Green type, the process of the tests or quizzes will be through the distribution of the examination sheets. The Student will write his/her name on all examination sheets sides and then return it to the instructor after the test.
- Students must use pen through the examination sheets [tests or quizzes] and pencil for scantron sheet only (easy to erase), and both should be delivered to the Instructor
- Some of the home-work and the assignments should be submitted in printing [use Times New Roman, 12 pt. font size, and single space] according to the form distributed by Instructor. Sometimes handwriting will be required, and both the home-work and the assignments will be evaluated and graded by the Instructor.
- Students must respect the class time, Instructor, and other Students. **Do not be late for the class and tests.**
- **If you arrive late for a test, you will not be allowed to take that test, especially if one student has already finished the test and left the classroom. So, please be in the class at least 10 minutes before the test.**



- **Using any electronic devices [cell phone, I Phone, etc.] will not permitted during the tests for any reason and all the students must TURN OFF these devices before entering the class, and keep them in their bag or pocket during the test.**

Students with Disabilities

HCC strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability (including mental health, chronic or temporary medical conditions), please meet with a campus Abilities Counselor as soon as possible in order to establish reasonable accommodations. Reasonable accommodations are established through an interactive process between you, your instructor(s) and Ability Services. It is the policy and practice of HCC to create inclusive and accessible learning environments consistent with federal and state law. For more information, please go to <http://www.hccs.edu/district/students/disability-services/>

Title IX statement

Houston Community College is committed to cultivating an environment free from inappropriate conduct of a sexual or gender-based nature including sex discrimination, sexual assault, sexual harassment, and sexual violence. Sex discrimination includes all forms of sexual and gender-based misconduct and violates an individual's fundamental rights and personal dignity. Title IX prohibits discrimination on the basis of sex-including pregnancy and parental status-in educational programs and activities. If you require an accommodation due to pregnancy please contact an Abilities Services Counselor. The Director of EEO/Compliance is designated as the Title IX Coordinator and Section 504 Coordinator. All inquiries concerning HCC policies, compliance with applicable laws, statutes, and regulations (such as Title VI, Title IX, and Section 504), and complaints may be directed to:

David Cross
Director EEO/Compliance
Office of Institutional Equity & Diversity
3100 Main
(713) 718-8271
Houston, TX 77266-7517 or Houston, TX 77266-7517 or Institutional.Equity@hccs.edu

Academic Honesty



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

EGLS₃ -- Evaluation for Greater Learning Student Survey System

At Houston Community College, professors believe that student feedback is necessity 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 professor 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.

HCC Public Emergency Plan 3-7-11

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 (713-718-8800 provides 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.

Please read the important points about the public emergency plan through the following link:

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

Campus Carry Law

“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/>.”



Guide Sheet for

Emergency Support Document and acknowledgement letter for late or missed assignment

In order to receive full credit for scores for missed and or late assignments, student needs to provide a hard copy of support evidence for emergency cases and a letter (hand written preferred, signed and dated) covering the following statements from the syllabus (hand it to instructor in person next class):

- 1- You need to say that you know you will be awarded 0 point for any late work for non-emergency cases
- 2- You need to say that you know that emergency cases are things beyond student's control like health, accidents, and cases in life that occur unplanned once-in-a-while or non-frequent.
- 3- You need to say you will do everything in your power to show student ethical behavior for all courses in SciEngTech at HCC-NE and turn in all required assignments on-time as specified in their respective syllabi.

How to Find Syllabus on Learning Web:

Go to www.hccs.edu, select For Information, click faculty, click Learning Web, search for Azita Ahosseini, Click on the name/picture, select Syllabus or Curriculum Vita.