

Course Syllabus – CNST 2325

Process and Industrial Subsystems

Course Description:

This course introduces students to the terminology and functional details of mechanical and electrical systems common to process and industrial plant projects. The curriculum encompasses installation methods, management techniques specific to industrial construction for mechanical and electrical systems, applicable hardware process safety hazards and basic calculations of systems, determination of power requirements, and selection of systems.

Course Prerequisites:

CNST 1315 Project Drawings Graphics

Textbook:

Process Technology Equipment, Pearson Education, Inc, Prentice Hall.
ISBN 0-13-700412-5

Course Learning Outcomes:

Upon the completion of the course students will demonstrate the ability to:

1. Understand the basic principles of mechanical, electrical, and piping systems
2. Understand the basic science principles with Mechanical, Electrical & Piping (MEP) systems
3. Understand the operation and installation of Mechanical, Electrical & Piping (MEP) systems
4. Understand the construction manager's role with Mechanical, Electrical & Piping (MEP) systems

Student Learning Outcomes:

20. Understand the basic principles of mechanical, electrical, and piping systems.

Course and Student Learning Outcome Mapping:

Student Learning Outcome	Course Learning Outcomes
20	1, 2, 3, 4

Student Learning Assessment and Assessment Target:

Assessment	SLO#10	Assessment Target
Assess(A)	X	At least 70% of students receive a grade of 70 or better

Class Grading:

Piping System Test	15%
Electrical System Test	20%
Mechanical System Test 1	20%
Mechanical System Test 2	20%
Mechanical System Test 3	25%

Note: Grading allocation above subject to change based on instructor discretion)

Grading Scale:

Letter Grade	Score
A	93-100%
A-	90-92%
B+	86-89%
B	83-85%
B-	80-82%
C+	76-79%
C	73-76%
C-	70-72%
D+	65-69%
D	60-64%
F	Below 60

Schedule of Topics:

Week #	Lecture Topics	Homework Assignment(s), Tests
1	Introduction Chapter 1: Introduction to Process Equipment Lecture	Read Chapters 1-4
2	Front End Loading Lecture Chapter 2: Process Drawings and Equipment Standards Lecture Chapter 3: Piping, Tubing, Hoses, and Fittings Lecture Chapter 4: Valves Lecture	Prepare for Piping Systems Test (Chapters 3 & 4)
3	Test: Piping Systems Test (Chapters 3 & 4): Pipes & Valves	Test on Black Board take during the week Read Chapters 6 & 7
4	Chapter 6: Pumps Lecture Chapter 7: Compressors Lecture	Read Chapters 8
5	Chapter 8: Turbines Lecture Industry Organization Structure and Site Planning Lecture	Prepare for Test
6	Test: Mechanical Systems 1 Test (Chapters 6,7 & 8) Pumps, Turbines and Compressors	Test on Black Board take during the week Read Chapters 5 & 11
7	Chapter 5: Tanks and Vessels Lecture Chapter 11: Heat Exchangers Lecture	Read Chapters 12
8	Process and Industrial Subsystems – Chapters 12 Lecture	Prepare for Test
9	Test: Mechanical Systems Test 2 (Chapters 5,11 &12) Tanks, Vessels, Heat Exchangers, Cooling Towers	Test on Black Board take during the week Read Chapters 9 & 21
10	Chapter 9: Electrical Distribution and Motors Lecture Chapters 21: Environmental Control	Prepare for Test

	Equipment Lecture	
11	Test: Electrical Systems Quiz (Chapters 9 & 21): Electric Distribution and Motors Environmental Control System	Test on Black Board, Read Chapters 9 & 21 Read Chapters 13 & 14
12	Chapter 13: Furnaces Lecture Chapter 14: Boilers Lecture	Read Chapters 15 & 18
13	Chapter 15: Auxiliary Equipment Lecture Chapter 18: Reactors Lecture	Read Chapters 17
14	Chapter 17: Separation Equipment	Prepare for Test
15	Test: Mechanical Systems Test 3 (Chapters 13, 14, 15, 17 & 18) Furnaces, Boilers, Auxiliary Equipment (Utilities), Separation & Reactors.	Final Exam Test: Test on Black Board

Academic Honesty:

The instructor reserves the right to adjust letter grades, upward only, based on individual attendance and class participation if numerical grade warrants such consideration. Each unexcused absence in excess of two during the semester will result in adjustment of the final grade downward by one letter grade. Students who violate University rules on scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and dismissal from The University. Since dishonesty harms the individual, all students, and the integrity of The University, policies on scholastic dishonesty will be strictly enforced.

Students with Disabilities:

University of Houston provides, upon request, appropriate academic adjustments for qualified students with disabilities. Any student with a documented disability (physical or cognitive) who requires academic accommodations should contact the Center for Students with Disabilities (713/743-5400) for more assistance.

Exam Policy:

Exams will include material covered in lecture discussions, book and homework assignments. Exam make-up will be given only in the event of a verified emergency or doctor-verified sickness. The student is responsible for all reading assignments and class handouts whether or not covered in class or listed on the syllabus.

Homework:

All homework must be completed in a professional manner and in a Microsoft electronic format (Word and/or PowerPoint). Homework will be graded based on technical content, clear organizational format and timeliness. All homework must be submitted into Blackboard. Student must read text chapters prior to the scheduled lecture to be prepared for discussions and the class participation. Assignments turned in late will be counted off 20 percent per day (only exceptions listed previously).

Course/Instructor Evaluation:

A Start-Stop-Continue survey and a course/instructor evaluation will be conducted at the middle and/or the end of this semester. Any suggestions you have on improving the course, however, are welcome throughout the semester.

For detailed information about Disabilities, Religious Holy Days, the Academic Calendar, and Academic Honesty, and other information, please visit the following website:

http://www.uh.edu/provost/stu/stu_syllabsuppl.html

<https://elearning.uh.edu/webapps/portal/frameset.jsp>