

CHEN 4887 - Process and Plant Design 1

Fall 2026 Syllabus, Section 01, CRN 40745,

Credit hours: 3

Instructor

Holly Martin

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Public Instructor Information

Instructor Title:

Professor

Instructor Professional Qualifications:

PhD., Chemical Engineering, Mississippi State University, 2006

B.S., Chemical Engineering, Mississippi State University, 2002

Instructor Office Location:

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Course Description

4887. Process and Plant Design 1. An examination of engineering economic analysis to include: cost estimation, profitability, optimum design, principles of fixed and operating costs, materials and site selection, and general and specialized design techniques. Prereq.: CHEN 3787 Minimum grade of C, CHEN 4880 Minimum grade of C and unrecalculated GPA of 2.0 or better in major courses. 3 s.h.

Course Readings

Group	Title	Author	ISBN
Required	Analysis, Synthesis, and Design of Chemical Processes	Turton, Richard, et al.	9780134177403

The course readings are subject to change in the event of extenuating circumstances, research developments, current events, and/or to ensure better learning.

Schedule of Topics and Assignments

Day	Date	Proposed Topic	Due/To Prepare for Class
Mon	8/24	Brief Syllabus	
Wed	8/26	Flammability Limits and Diagrams	
Fri	8/28	Flammability Limits and Diagrams	
Mon	8/31	Explosions	
Wed	9/2	Ethics and Professionalism	
Fri	9/4	Ethics and Professionalism	Receive Homework #1
Mon	9/7	No Class - Labor Day	
Wed	9/9	Ethics and Professionalism	
Fri	9/11	Ethics and Professionalism	Homework #1 Due
Mon	9/14	Estimation of Capital Costs	
Wed	9/16	Estimation of Capital Costs	Receive Homework #2
Fri	9/18	Estimation of Capital Costs	

Mon	9/21	Estimation of Capital Costs	
Wed	9/23	Estimation of Capital Costs	Homework #2 Due
Fri	9/25	Estimation of Manufacturing Costs	Receive Homework #3
Mon	9/28	Estimation of Manufacturing Costs	
Wed	9/30	Project 1 Information Gantt Charts	Receive Project 1
Fri	10/2	Estimation of Manufacturing Costs	Homework #3 Due
Mon	10/5	Engineering Economic Analysis	Receive Homework #4
Wed	10/7	Engineering Economic Analysis	
Fri	10/9	Engineering Economic Analysis	
Mon	10/12	Profitability Analysis	Homework #4 Due
Wed	10/14	Profitability Analysis	Receive Test 1 - Material from 08/24 - 10/09
Fri	10/16	Profitability Analysis	Test 1 Due Receive Homework #5
Mon	10/19	Heuristics	Receive Homework #6
Wed	10/21	Heuristics - In Computer Lab, Compressors	
Fri	10/23	Heuristics - In Computer Lab, Heat Exchangers	Homework #5 Due
Mon	10/26	Heuristics - In Computer Lab, Distillation Columns	Homework #6 Due
Wed	10/28	Heuristics - In Computer Lab, Distillation Columns	
Fri	10/30	Heuristics - Piping and Pumps	Project 1a Due
Mon	11/2	Pinch Analysis	Receive Homework #7
Wed	11/4	Pinch Analysis	
Fri	11/6	Pinch Analysis	
Mon	11/9	Pinch Analysis	Homework #7 Due Receive Homework #8
Wed	11/11	No Class - Veteran's Day	
Fri	11/13	Performance Curves	
Mon	11/16	Performance Curves	Homework #8 Due
Wed	11/18	Performance Curves	Receive Test 2 - Material from 10/12 - 11/9
Fri	11/20	Performance Curves	Test 2 Due
Mon	11/23	Performance Curves	
Wed	11/25	No Class - Thanksgiving Holidays	
Fri	11/27	No Class - Thanksgiving Holidays	
Mon	11/30	Performance Curves	
Wed	12/2	Performance Curves	
Fri	12/4	Performance Curves	
Mon	12/7	No Class - Final Exam Week	
Wed	12/9	No Class - Final Exam Week	Project 1 Due
Fri	12/11	No Class - Final Exam Week	

The course schedule, policies, procedures, and assignments in this course are subject to change in the event of extenuating circumstances, by mutual agreement, and/or to ensure better learning.