

Copilot

CHEM102 - Introduction to Chemical Engineering Design

University: Eastern Institute of Technology

Course Duration: Full Year (Fall and Winter)

Instructor: Dr. Alice Green

Contact Information: alice.green@eit.edu

Office Hours: Mondays and Wednesdays, 2:00 PM - 4:00 PM

Course Description

This first-year course introduces students to the basics of chemical engineering design. Students work in teams to design a simple chemical process, such as water purification or biofuel production, based on a real-world problem.

Learning Outcomes

By the end of this course, students will be able to:

1. Understand the fundamentals of chemical engineering principles.
2. Apply process design and simulation techniques.
3. Consider safety and environmental impacts in chemical engineering design.
4. Work effectively in teams to solve engineering problems.
5. Communicate design concepts and results through written reports and oral presentations.

Course Timeline and Deliverables

Fall Semester:

Date	Deliverable	Description	Weight
September 15, 2020	Team Formation and Project Proposal	Teams form and submit a proposal outlining the project scope and objectives.	10%
October 20, 2020	Process Flow Diagram and Initial Design	Submission of a process flow diagram and initial design considerations.	15%
November 25, 2020	Preliminary Design Review	Presentation of initial design, including process flow and safety analysis.	15%
December 10, 2020	Midterm Progress Report	Report on progress, challenges, and next steps.	10%

Winter Semester:

Date	Deliverable	Description	Weight
February 15, 2021	Detailed Design Document	Comprehensive design document with detailed process flow and safety analysis.	15%
March 20, 2021	Prototype Development and Testing Report	Report on prototype development and testing results.	20%
April 10, 2021	Final Presentation and Demonstration	Final presentation and demonstration of the chemical process design.	15%

Grading Breakdown

- Team Formation and Project Proposal: 10%
- Process Flow Diagram and Initial Design: 15%
- Preliminary Design Review: 15%
- Midterm Progress Report: 10%
- Detailed Design Document: 15%
- Prototype Development and Testing Report: 20%
- Final Presentation and Demonstration: 15%

Total: 100%

Course Policies

- **Attendance:** Regular attendance is required. More than three unexcused absences may result in a lower grade.
- **Late Submissions:** Assignments submitted late will incur a penalty of 5% per day, up to a maximum of 25%.
- **Academic Integrity:** All students are expected to adhere to the university's academic integrity policy. Plagiarism or cheating will result in disciplinary action.

Required Materials

- Textbook: "Introduction to Chemical Engineering: Tools for Today and Tomorrow" by Kenneth A. Solen and John N. Harb
- Access to process simulation software (e.g., Aspen HYSYS)
- Prototyping materials (to be specified based on project requirements)

Additional Resources

- University Library
- Chemical Engineering Lab
- Online tutorials and workshops

This syllabus provides a comprehensive overview of the CHEM102 course, including key elements such as learning outcomes, a detailed timeline with deliverables, and their respective weights. If you need any further details or adjustments, feel free to ask!