

Tuskegee University
College of Engineering
Department of Chemical Engineering

Spring 2024



Course: CENG 0490, Senior Design Project

Hours: Wednesday 02:00 PM - 05:00 PM

Location: Luther H. Foster Hall, Room 528

Coordinator: Shahryar Jafarinejad, PhD

Email: sjafarinejad@tuskegee.edu

Office: Luther H. Foster Hall, Room 522B

Phone: 334-724-4318

Office Hours: Tuesday 01:00 PM - 02:00 PM; Wednesday 11:00 AM - 01:00 PM; others by appointment

Credit Hours: 3.0

Prerequisites: CENG 0470

Textbook: None

Course Objectives:

Students will

Objective1. Conduct a comprehensive literature survey on a chemical process.

Objective2. Design a complete chemical process and perform economic analysis of the process.

Objective3. Develop oral and written communication skills.

Objective4. Function on a team.

Course level student learning outcomes:

1. an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
2. an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
3. an ability to communicate effectively with a range of audiences
4. an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global,

6. an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
7. an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

General Policies:

Attendance is important for successful completion of this course.

No late project is accepted.

Brief typewritten progress reports are submitted to the instructor every week, and short presentations on weekly progress reports are given to the class.

The final oral presentations will be scheduled for the week before the final semester examination period.

A typewritten final report should be ready for the week before the final semester examination period.

Weekly progress reports as well as a final report should be written with a PC-computer word processor.

Medical reasons with **WRITTEN PROOF**.

In the event of an excused absence, make up assignments must be done by the next class meeting following the date of the excused absence (unless scheduled with the instructor). The student is responsible for his/her own missed assignments.

Effective Spring 2012, the tuskegee.edu email system at Tuskegee University is required for all instructional administrators, faculty, staff and students.

Effective Spring 2012, all instructional administrators, faculty, staff and students are required to use CANVAS and Navigate (EAB).

Academic dishonesty policies outlined in the undergraduate handbook will be strictly enforced.

Grading Criteria:

| Category | Percentage (%) |
|--|-----------------------|
| Weekly progress reports/oral presentations | 40 |
| Final report | 40 |
| Final oral presentation | 20 |

Final Grading Scale:

| Percentage (%) | Letter Grade |
|-----------------------|---------------------|
| 90-100 | A |
| 80-89 | B |
| 70-79 | C |
| 60-69 | D |
| 0-59 | F |

Progress and Final Reports (40%):

| Category | Percentage (%) |
|-----------------|-----------------------|
| Content | 5 |
| Summary | 5 |

| | |
|-----------------------------|----|
| Introduction | 5 |
| Theory | 5 |
| Hazard control and analysis | 10 |
| Results | 10 |
| Discussion | 10 |
| Conclusion | 5 |
| References | 5 |
| Design calculations | 40 |

References

- 1) M.S. Peters, K.D. Timmerhaus, R.E. West, Plant Design and Economics for Chemical Engineers, Fifth Edition, McGraw-Hill.
- 2) Seider, Seader and Lewin, Process Design Principles, John Wiley & Sons, Inc., New

**Chemical Engineering Department
Tuskegee University**

Oral Presentation Evaluation

Second semester 2023-2024

Your Name: _____

Course Number: CENG 490

Date: _____

| Name of student | Organization | Subject Knowledge | Graphics | Mechanics | Eye Contact | Elocution | Total Score |
|-----------------|--------------|-------------------|----------|-----------|-------------|-----------|-------------|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

| | Evaluating Student Presentations | | | |
|---------------------|--|--|---|--|
| | 1 | 2 | 3 | 4 |
| Organization | Audience cannot understand presentation because there is no sequence of information. | Audience has difficulty following presentation because student jumps around. | Student presents information in logical sequence which audience can follow. | Student presents information in logical, interesting sequence which audience can follow. |

Covid-Statement

Excuses related to covid infection as well as exposure have to be received from the Dean of Students office. Students should request the excuse for absence from the Dean of Students office as soon as they become aware of covid infection or exposure. Students may request a classes missed memo by contacting the Office of the Dean of Students and Student Conduct (334) 727-8421, via e-mail tharper@tuskegee.edu or by going into the office located in suite 203 Tompkins Hall.