

TUSKEGEE UNIVERSITY
COLLEGE OF ENGINEERING
CHEMICAL ENGINEERING DEPARTMENT
Spring 2024

COURSE: CENG 110 – Introduction to Chemical Engineering
SCHEDULE: Monday 2-4 PM
LOCATION: Luther H. Foster Hall; Room # 528
INSTRUCTOR: Shamim Ara Begum, PhD
OFFICE: 522E Luther Foster Hall
TELEPHONE: ext. 8795
FAX: (334) 724-4188
E-MAIL: sbegum@tuskegee.edu
CREDIT HOURS : 1.0
OFFICE HOURS: MW: 9:00 -12:00; 1:00 -2:00 and T: 10:00 -12:00
Textbook: None

CATALOG DESCRIPTION

Introduction to chemical engineering principles & equipment. Calculations on simple industrial processes.

COURSE OBJECTIVES

This course is designed to give first year students an introduction to chemical Engineering. The students will be given an overview of the field and will understand what a typical chemical engineer does for a living. Students will

1. Be aided in their transition from high school to the pursuit of a chemical engineering degree
2. Gain an appreciation for the chemical engineering profession
3. Develop an understanding of basic physical and chemical principles and how to relate them to realistic situations in chemical engineering.
4. Develop an understanding of mathematical techniques for estimating properties.
5. Develop problem solving skills.
6. Develop an understanding of how to formulate simple material and energy balances.
7. Use spreadsheet software (Microsoft Excel) to solve engineering problems.

COURSE OUTCOMES

Outcomes	1	2	3	4	5	6	7
Objective 3	X						
Objective 4	X						
Objective 5	X						
Objective 6	X						
Objective 7							X

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 solutions and make informed judgements, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgement to draw conclusions.
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

PREREQUISITES: None

ATTENDANCE: 100% required

GRADING: Homework	10%	A= 90 – 100
Class attendance	10%	B= 80 - 89
Tests 1-3	50%	C= 70 - 79
Final Exam	30%	D= 60 - 69
	100%	F= 0 - 59

COURSE POLICIES:

You will need to sign the class roster each day to be counted as attending the class.

You are expected to be in class on time (2:10 pm). If you are unable to attend a class or take an exam, it is your responsibility to present an excuse to your instructor. Valid excuses include serious illness, death in the immediate family, and participation in University-sponsored events. Any other excuse will be evaluated by the instructor. An excused absence allows you to make up any work you missed without any late penalties

in two weeks of return. It is the student's responsibility to meet with the instructor to submit the missed work for an excused absence. Failure to contact the instructor and present her with a valid excuse will result in an unexcused absence. An unexcused absence means that any work (homework/design report) you missed can be turned in for 25% deduction within two week of the due date. It is the student's responsibility to meet with the instructor to submit the missed work.

The student is expected to attend the class within 10 minutes after time for class to start (2:20 pm). If not, the student will be given a zero in attendance and participation for that day.

Homework will be assigned in the class or CANVAS and completed homework will be submitted to the instructor in the class on the due date. Students are responsible to check the CANVAS regularly for any assigned homework and announcements.

No make-up exams or retests will be taken without a valid written excuse.

Final exam will be done in the exam white book given by the instructor in **pen**.

Cheating will not be tolerated. Any student caught cheating will get a zero for that homework and exam.

No electronic devices (cell phone, iPad, laptop etc.) except calculator will be allowed during class time, exams, and final exam.

Head gear and dark sunshades are not allowed in class, unless they are of religious significance.

Students are not allowed to talk with each other during lecture, exams, and final exam. If there is an emergency, the students need to go outside of the class to talk for maintaining a better learning environment in the classroom.

Students need to submit their homework by themselves. They should not give their homework to another student to submit to the instructor. The instructor will not accept this type of submission.

Students need to be present on time during exams. The time during exams will not be extended without a valid written excuse.

The student is expected to attend regularly all classes in an attire that meets the College's Dress Code Policy of Business Casual. Students who are not attired appropriately will be asked to leave class and may return with appropriate dress. Students may return with the tardy noted; however, students who do not return will receive an absence. The instructor has the right to establish the rules and regulations for the classroom for it to be a conducive place for teaching and learning. The classroom is the place for the beginning

of professional training.

Effective Spring 2012 ALL Instructional Administrators, Faculty, Staff and Students are REQUIRED to use TU email.

COVID Policy:

“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 completing this form (<https://forms.gle/4ozusHX2tTCUW4yK6>) and then contact 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.”

Additional policies will be issued, if they are necessary.

COURSE SCHEDULE:

GENERAL TOPIC	Sessions
Logistics and transitioning from high school to college	1
Introduction to Chemical Engineering	1
Introduction to Engineering Calculations	1
Introduction to Chemical Engineering Process Variables	2
Test No 1 *	1
Material Balances	2
Test No 2 *	1
Energy Balances	2
Process Equipment	1
Test No 3*	1
Data Analysis	1
Software	1
Final Exam (Date will be announced by the university)	1

*Tentative

**STATEMENTS OF COE EXPECTATIONS REGARDING STUDENTS’
ACADEMIC PROFICIENCY**

Academic excellence is a tradition of the Tuskegee University College of Engineering, (COE). Students and faculty must collectively and proactively guard this tradition. The college hereby renews its commitment to the tradition by stating as follows:

1. Students are expected to develop self-confidence through acquisition of in-depth knowledge in all subjects through, as a minimum:
 - a. Studying to understand rather than studying to get by.
 - b. Challenging oneself to solve problems independent of textbooks or formulae sheets

- c. Attempting diverse and multiple problems, multiple times, for depth and breadth of knowledge
2. Students are expected to be self-motivated through setting their own goals & schedules, spending time to study, and sharing their knowledge with peers.
 - a. Students should invest a minimum of two hours of study-time per week for every credit hour taken.
 - b. Students should seek or establish environments that encourage positive social interaction and engages in active learning.
3. COE is committed to providing support systems to students for higher achievement through the following avenues:
 - a. Direct access to instructors
 - b. Archives of faculty recorded course lectures
 - c. Dedicated peer tutors by fellow students at all academic levels
 - d. Periodic visits by alumni and industry subject matter experts
 - e. Opportunities for local and national academic related competitions
4. All COE students are expected to take advantage of all support systems. Students are particularly expected to adopt the notions of “self-confidence through knowledge acquisition” and “self-motivation to bring out best in self” as the COE fundamental culture for success.