

MECH3310 Thermodynamics
Flipped/Hybrid Course Syllabus
3.0 credit hours

Course Information

Course Number/Section MECH 3310
 Course Title Thermodynamics
 Term Fall 2024
 Course Credits: 3.0 credit hours
 Location: FO 2.404
 Instructor-led discussion sessions: 1:00pm -2:15pm Wednesdays

Professor Contact Information

Professor Dr. Hui Ouyang
 Office Phone 972-883-3584
 Office ECSW 2.150F
 Email Address Hui.Ouyang@utdallas.edu
 Office hour TBD
 Course platform **eLearning and Microsoft**

TAs

Guo, Yuhui yuhui.guo@utdallas.edu
 Office ECSW 2.150

Course Modality and Expectations

Instructional Mode	This is a flipped/Blended course. You are required to finish watching lecture videos online and attend Wednesdays discussion sessions weekly.
Course Platform	Elearning
Expectations	<p>You need to follow Elearning to watch recorded lecture videos.</p> <p>There are 9 quizzes, 10 homework assignments, and three exams. The due dates for each are shown in the schedule (Elearning). You are required to turn in all assignments on time and finish quizzes and exams in the expected time windows.</p> <p>You are expected to participate in class discussions by attending the discussion sessions and completing active learning activities.</p> <p>You are advised (NOT required) to work in a group for HW assignments. Group work skills will be practiced.</p>
Asynchronous Learning Guidelines	This is a flipped course with in-person discussion sessions.

Class Materials

The Instructor may provide class materials that will be made available to all students registered for this class as they are intended to supplement the classroom experience. These materials may be downloaded during the course; however, these materials are for registered students' use only. Classroom materials may not be reproduced or shared with those not in class or uploaded to other online environments except to implement an approved AccessAbility Resource Center accommodation. Failure to comply with these University requirements is a violation of the [Student Code of Conduct](#).

Class Attendance

The University's attendance policy requirement is that individual faculty set their course attendance requirements. Regular and punctual class attendance is expected. Students who fail to attend class regularly are inviting scholastic difficulty. In some courses, instructors may have special attendance requirements; these should be made known to students during the first week of classes.

Class Participation

Regular class participation is expected. Students who fail to participate in class regularly are inviting scholastic difficulty. A portion of the grade for this course is directly tied to your participation in this class. It also includes engaging in group or other activities during class that solicit your feedback on homework assignments, readings, or materials covered in the lectures (and/or labs). Class participation is documented by faculty. Successful participation is defined as consistently adhering to University requirements, as presented in this syllabus. Failure to comply with these University requirements is a violation of the [Student Code of Conduct](#).

Texas Senate Bill 17, the recent law that prohibits diversity, equity, and inclusion programs and activities at public universities in Texas, does not in any way apply to academic course instruction.

Class Recordings

The instructor may record meetings of this course. Any recordings will be available to all students registered for this class as they are intended to supplement the classroom experience. Students are expected to follow appropriate University policies and maintain the security of passwords used to access recorded lectures. Unless the Office of Student AccessAbility has approved the student to record the instruction, students are expressly prohibited from recording any part of this course. Recordings may not be published, reproduced, or shared with those not in the class, or uploaded to other online environments except to implement an approved Office of Student AccessAbility

accommodation. If the instructor or a UTD school/department/office plans any other uses for the recordings, consent of the students identifiable in the recordings is required prior to such use unless an exception is allowed by law. Failure to comply with these University requirements is a violation of the [Student Code of Conduct](#).

Course Pre-requisites, Co-requisites, and/or Other Restrictions

MECH 1208 and ENGR 3300 and PHYS 2325. Prerequisite or Corequisite: CHEM 1311. (3-0) S

Course Description

MECH 3310 - Thermodynamics (3 semester credit hours) Lecture course. This course focuses on introductory concepts and definitions of thermodynamics: energy and the first law of thermodynamics; evaluating properties and Ideal gas model; control volume analysis using energy; entropy and the second law of thermodynamics; refrigeration and power systems

Course Learning Objectives/Outcomes

CLO 1	Be able to perform the energy analysis of closed and open systems using the first law of thermodynamics.
CLO 2	Be able to identify the correct tables, diagrams, and processes to evaluate system properties.
CLO 3	Be able to solve engineering problems in thermodynamic systems by applying the second law of thermodynamics.

Required Textbooks and Materials

Required Texts

Fundamentals of Engineering Thermodynamics, 9th Ed. Moran & Shapiro. Publisher: John Wiley & Sons, Inc. However, if you are able to obtain a copy of another edition, feel free to use it.

- **Solve engineering problems that involve thermodynamic principles.**

Textbooks and some other bookstore materials can be ordered online or purchased at the [UT Dallas Bookstore](#).

Schedule

The schedule is subject to change.

Week	Lecture videos*	Instructor-led discussion	Assignments	Assignments due Sundays	Exam	Notes
Week 1	Chapter 1	8/21/2024				
Week 2	Chapter 2 Unit 1	8/28/2024	Quiz 1; HW1	9/1/2024		Quiz 1&HW1 covers
Week 3	Chapter 2 Unit 2	9/4/2024	Quiz 2; HW2	9/8/2024		Quiz 2&HW2 cover Chapter 2 Unit 1
Week 4	Chapter 3 Unit 1	9/11/2024	Quiz 3; HW3	9/15/2024		Quiz 3&HW3 cover Chapter 2 Unit 2
Week 5	Chapter 3 Unit 1&2	9/18/2024	Quiz 4; HW4	9/22/2024		Quiz 4&HW4 cover Chapter 3 Unit 1
Week 6	Chapter 3 Unit 2	9/25/2024			9/25/2024 1pm-2:15 pm Exam 1	Exam 1 cover chapter 1&2
Week 7	Chapter 4 Unit 1	10/2/2024	Quiz 5&HW5	10/6/2024		Quiz 5&HW5 cover Chapter 3 Unit 2
Week 8	Chapter 4 Unit 2	10/9/2024	HW6	10/13/2024		HW6 cover Chapter 4 Unit 1
Week 9	Chapter 5 Unit 1	10/16/2024	Quiz 6; HW7	10/20/2024		Quiz 6 covers Chapter 4 Unit 1&2; HW7 cover Chapter 4 Unit 2
Week 10	Chapter 5 Unit 2	10/23/2024			10/23/2024 1pm-2:15pm Exam 2	Exam 2 covers Chapter 3&4;
Week 11	Chapter 6 Unit 1	10/30/2024	Quiz 7; HW8	11/3/2024		Quiz 7 & HW 8 cover Chapter 6 Unit 1
Week 12	Chapter 6 Unit 2	11/6/2024		11/10/2024		
Week 13	Chapter 6 Unit 3	11/13/2024	Quiz 8 & HW9	11/17/2024		Quiz 8 & HW 9 cover Chapter 6 Unit 1&2
Week 14	Final exam review	11/20/2024	Quiz 9&HW10	11/24/2024		Quiz 9 & HW 10 cover Chapter 6 Unit 3
Week 15	Thanksgiving break					
Week 16	Final exam review	12/4/2024				
	Final exam					Exam 3 covers chapter 5&6
* lecture videos are posted on Eleanring.						
* Students need to complete watching corresponding lecture videos in arranged dates.						
* Students are required to finish watching lecture videos before joining the group discussion.						
** The schedule is subject to change.						

Grading Policy

Grades will be determined based on a fixed-point scale and a weighted average of assignments. *Homework and project are group assignments and you need to work with the group to complete those assignments.*

1. Homework assignments (Group or Individual work): 10%

2. **Class participation: 20%**
 - Participate in in-person discussion sessions on Wednesdays by asking questions, and **completing surveys through Microsoft Forms to earn participation points.**
3. **Quizzes: 20%**
4. **Tests: 50%**
 - Make-up exams will be only available with the Professor's permission in advance.
 - *Exam 1&2: 25%*
 - *Exam 3: 25%*

If you have any concerns, just **ASK!**

Course Policies

Make-up exams

You must have a certified (doctor or otherwise) excuse for missing any **test date**. I am willing to work with you for university-sanctioned travel or in other circumstances at least one week **BEFORE** the exam date.

Late Work

Late assignments will be accepted if only not exceeding 12 hours after the due date with a penalty of 10% points off.

Class Participation

You are expected to participate in class discussions, and finishing watching lecture videos, homework assignments, quizzes, and tests in Elearning, Teams, and in person.

Classroom Citizenship

You are part of the learning community. Respect each other and care for each other. Enjoy the semester.

Exams and Quizzes

Exam 1&2 will be in person during class time.

Exam 3 will happen in the final exam week.

Quizzes will be online through eLearning.

Comet Creed

This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same:

“As a Comet, I pledge honesty, integrity, and service in all that I do.”

Technical Requirements

In addition to a confident level of computer and Internet literacy, certain minimum technical requirements must be met to enable a successful learning experience. Please review the important technical requirements on the [Getting Started with eLearning](#) webpage.

Course Access and Navigation

This course can be accessed using your UT Dallas NetID account on the [eLearning](#) website.

Please see the course access and navigation section of the [Getting Started with eLearning](#) webpage for more information.

To become familiar with the eLearning tool, please see the [Student eLearning Tutorials](#) webpage.

UT Dallas provides eLearning technical support 24 hours a day, 7 days a week. The [eLearning Support Center](#) includes a toll-free telephone number for immediate assistance (1-866-588-3192), email request service, and an online chat service.

Communication

This course utilizes online tools for interaction and communication. Some external communication tools such as regular email and a web conferencing tool may also be used during the semester. For more details, please visit the [Student eLearning Tutorials](#) webpage for video demonstrations on eLearning tools.

Student emails and discussion board messages will be answered within 3 working days under normal circumstances.

Distance Learning Student Resources

Online students have access to resources including the McDermott Library, Academic Advising, the AccessAbility Resource Center, and many others. Please see the [eLearning Current Students](#) webpage for more information.

Server Unavailability or Other Technical Difficulties

The University is committed to providing a reliable learning management system to all users. However, in the event of any unexpected server outage or any unusual technical difficulty which prevents students from completing a time sensitive assessment activity, the instructor will provide an appropriate accommodation based on the situation. Students should immediately report any problems to the instructor and also contact the online [eLearning Help Desk](#). The instructor and the eLearning Help Desk will work with the student to resolve any issues at the earliest possible time.

Academic Support Resources

The information contained in the following link lists the University's academic support resources for all students.

Please go to [Academic Support Resources](#) webpage for these policies.

UT Dallas Syllabus Policies and Procedures

The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus.

Please go to [UT Dallas Syllabus Policies](#) webpage for these policies.

It is the policy and practice of The University of Texas at Dallas to make reasonable accommodations for students with properly documented disabilities. However, written notification from the AccessAbility Resource Center (ARC) is required. If you are eligible to receive an accommodation and would like to request it for this course, please discuss it with me and allow one-week advance notice. Students who have questions about receiving accommodations, or those who have, or think they may have, a disability (mobility, sensory, health, psychological, learning, etc.) are invited to contact ARC for a confidential discussion. ARC is located in the Administration Building, AD 2.224. They can be reached by phone at 972-883-2098, or by email at studentaccess@utdallas.edu.

The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor.