MECH3310 Thermodynamics
Blended/hybrid Course Syllabus
3.0 credit hours

Course Information

Course Number/Section	MECH 3310
Course Title	Thermodynamics
Term	*Fall* 2022
Course Credits:	3.0 credit hours
Location:	ECSW 1.355
Group discussion session:	10:00am -11:15am Mondays
Instructor-led discussion sessions:	10:00am -11:15am 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	2pm – 3 pm Fridays (in-person or virtually)
Course platform	**Elearning** and **Microsoft Teams**

TAs

Deepak Saptoka	deepak.sapkota@utdallas.edu
Office	ECSW 2.150

Course Modality and Expectations

Instructional Mode	This is a flipped/Blended course.
Course Platform	**Elearning**
Expectations	You need to follow Elearning to **watch recorded lecture videos**. There are 9 quizzes, 10 homework assignments, three exams, and one project. 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 expected time windows. You are expected to participate in class discussions by attending discussion sessions and completing active learning activities. You are required to work in a group. Group work skills will be practiced. You are required to meet with the group weekly and at least once a week. Group work will be evaluated including surveys, self-reflection report, HWs, and projects.
Asynchronous Learning Guidelines	This is a flipped course with in-person discussion sessions.

COVID-19 Guidelines and Resources

The information contained in the following link lists the University's COVID-19 resources for students and instructors of record.

Please see http://go.utdallas.edu/syllabus-policies.

Class Participation

Regular class participation is expected regardless of course modality. 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.

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.

Class Materials

Class notebook will be 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 Office of Student AccessAbility accommodation. 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 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	Date	Lecture videos*	Group discussion 10 am - 11:15 am	Instructor-led discussion	SRR (Due Mon.) at 11:59 pm	Other Assignments due Fridays	Assignments: surveys	Project and exam	Notes
Week 1	1/16 - 1/22	Chapter 1	**MLK day**	**1/18/23**		1/20/23			
Week 2	1/23 - 1/29	Chapter 2 Unit 1	**1/23/23**	**1/25/23**	SRR1 (Chapter 1)	1/27/23	Quiz 1; HW1		Quiz 1&HW1 covers Chapter 1
Week 3	1/30 - 2/5	Chapter 2 Unit 2	**1/30/23**	**2/1/23**	SRR2 (Chapter 2 Unit 1)	2/3/23	Quiz 2; HW2		Quiz 2&HW2 cover Chapter 2 Unit 1
Week 4	2/6 - 2/12	Chapter 3 Unit 1	**2/6/23**	**2/8/23**	SRR3 (Chapter 2 Unit 2)	2/10/23	Quiz 3; HW 3		Quiz 3&HW3 cover Chapter 2 Unit 2
Week 5	2/13 - 2/19	Chapter 3 Unit 1&2	**2/13/23**	**2/15/23**		2/17/23	Quiz 4; HW4		Quiz 4&HW4 cover Chapter 3 Unit 1
Week 6	2/20 - 2/26	Chapter 3 Unit 2	**2/20/23**	**2/22/23**	SRR4 (Chapter 3 Unit 1)	2/24/23	Quiz 5&HW5		Quiz 5&HW5 cover Chapter 3 Unit 2
Week 7	2/27 - 3/5	Chapter 4 Unit 1	**2/27/23**	**3/1/23**	SRR5 (Chapter 3)	3/3/23		3/1/2023 10am-11:45 am Exam 1	Exam 1 cover chapter 2&3
Week 8	3/6 - 3/12	Chapter 4 Unit 2	**3/6/23**		SRR6 (Chapter 4 Unit 1)	3/10/23	HW6		HW6 cover Chapter 4 Unit 1
Week 9	3/13 - 3/19	Spring break							
Week 10	3/20 - 3/26	Chapter 5 Unit 1	**3/20/23**	**3/22/23**	SRR7 (Chapter 4 Uni	3/24/23	Quiz 6; HW7		Quiz 6 covers Chapter 4 Unit 1&2; HW7 cover Chapter 4 Unit 2
Week 11	3/27 - 4/2	Chapter 5 Unit 2		**3/29/23**		3/31/23		3/29/2023 10am-11:45am Exam 2	Exam 2 covers Chapter 4;
Week 12	4/3 - 4/9	Chapter 6 Unit 1	**4/3/23**	**4/5/23**	SRR8 (Chapter 5)	4/7/23	Quiz 7; HW8		Quiz 7 & HW 8 cover Chapter 5 Uni
Week 13	4/10 - 4/16	Chapter 6 Unit 2	**4/10/23**	**4/12/23**	SRR9 (Chapter 6 Unit 1); Quiz 7; HW8	4/14/23			
Week 14	4/17 - 4/23	Chapter 6 Unit 3	**4/17/23**	**4/19/23**	SRR10 (Chapter 6 Unit 2)	4/21/23	Quiz 8 & HW9		Quiz 8 & HW 9 cover Chapter 6 Unit 1&2
Week 15	**4/24 - 4/30**	**Final Project**		**4/26/23**		4/28/23	Quiz 9&HW10		Quiz 9 & HW 10 cover Chapter 6 Unit 3
Week 16	**5/1 - 5/7**	**Final Project**		**5/3/23**				5/7/2023 Final Project due	
Week 17	5/8 - 5/14	Exam 3							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 be**

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 work): 10%**

2. **Class participation (Individual): 10%**
    1. Watch all videos in the learning module on Elearning and **complete the individual self-reflection report (not graded) to earn participation points.**
    2. Participate in in-person discussion sessions on Wednesdays by asking questions, and **completing surveys through Microsoft Forms to earn participation points.**

3. **Class participation (Group): 10%**
    - Participate in-person group discussion sessions on Mondays.
    - Complete the self-reflection report after the group discussion.
    - Complete group work survey as required.
    - Complete the group behavior survey.

4. **Quizzes (Individual): 15%**

5. **Tests (Individual): 40%**
    - Make-up exams will be only available with Professor's permission in advance.
    - *Exam 1&2:* **20%**
    - *Exam 3*: **20%**

6. **Project (Group work): 15%**

    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, projects, and tests in Elearning.

Classroom Citizenship

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

Exams and Quizzes

Exams and 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."

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.

The University of Texas at Dallas is committed to providing reasonable accommodations for all persons with disabilities. The syllabus is available in alternate formats upon request. If you are seeking classroom accommodations under the Americans with Disabilities Act (2008), you are required to register with the AccessAbility Resource Center, located in the Administration Building (AD), Suite 2.224. Their phone number is 972-883-2098, email: accessability@utdallas.edu and website is https://accessability.utdallas.edu(opens in a new tab). To receive academic accommodations for this class, please obtain the proper AccessAbility Resource Center letter of accommodation and meet with me at the beginning of the semester.

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