Course Syllabus

MECH 3120.101 ~ 106
HEAT TRANSFER LAB Fall 2025, Room ECSW 2.335

Section 102 – Thursday 4:00 PM Section 103 – Friday 10:00 AM Section 106 – Tuesday 4:00 PM **TA: Lizeth Gutierrez**	Section 101 – Wednesday 4:00 PM Section 104 – Friday 4:00 PM Section 105 – Wednesday 1:00 PM **TA: Abdullahi Olapojoye**

Professor Contact Information

Prof. Fatemeh Hassanipour
Office location: ECSW 4.150H, Phone: 972-883-2914, Email: fatemeh@utdallas.edu
Office Hours: By Appointment Only

TA	Email	Office Hours (location: ECSW 2.335)
Lizeth Gutierrez	Lizeth.GutierrezPua@utdallas.edu	Tue. Thu. 4:45-5:30 PM, Fri. 10:45-11:30 AM
Abdullahi Olapojoye	Abdullahi.Olapojoye@utdallas.edu	Wed. 1:45-2:30 and Wed. , Fri. 4:45-5:30 PM

Course Description: Project-based course associated with MECH 3320. Course emphasis is on experiments related to thermodynamics, heat transfer, and fluid mechanics. Proper experimental methods, data and uncertainty analysis related to thermal and fluids measurements are discussed.

Pre-requisite: Heat Transfer Course

Student Learning Objectives/Outcomes

1. Demonstrate heat transfer principles, mainly conduction and convection, using experiments.
2. Measure efficiency of thermal systems such as heat exchangers.
3. Function as a team to plan, perform, and report a series of experiments related to heat transfer topics.

Required Textbooks and Materials: Lab Manual and "Fundamentals of Heat and Mass Transfer" by Incropera et al.
Suggested Course Materials: Course Notes

Assignments & Academic Calendar

Lecture-1	Individual Homework	Introduction and Error Analysis
Lecture-2	Group Report	Concentric Heat Exchanger
Lecture-3	Group Report	Shell and tube Heat Exchanger
Lecture-4	Group Report	Forced Convection-1 (Velocity and Pressure Measurement)
Lecture-5	Group Report	Forced Convection-2 (Heat Transfer Coefficient)
Lecture-6	Group Report	Conductivity
Lecture-7	Group Report	Radiation and Natural Convection

Lab Schedule:

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GROUP A

The week of:	
Dec.7	No Class
Nov.30	No Class
Nov.23	**Thanksgiving**
Nov.16	No Class
Nov.9	Exp-6: Radiation
Nov.2	No Class
Oct.26	Exp-5: Conductivity
Oct.19	No Class
Oct.12	Exp-4: Forced Convection-2
Oct.5	No Class
Sep.28	Exp-3:Forced Convection-1
Sep.21	No Class
Sep.14	Exp-2: HX-2
Sep.7	No Class
Aug.31	Exp-1: HX-1
Aug.24	Introduction and Error Analysis

Dec.7	Lab Report 6-Due Date
Nov.30	Lab Report 6-Due Date
Nov.23	
Nov.16	Lab Report 5-Due Date
Nov.9	Lab Report 5-Due Date
Nov.2	Lab Report 4-Due Date
Oct.26	Lab Report 4-Due Date
Oct.19	Lab Report 3-Due Date
Oct.12	Lab Report 3-Due Date
Oct.5	Lab Report 2-Due Date
Sep.28	Lab Report 2-Due Date
Sep.21	Lab Report 1-Due Date
Sep.14	Lab Report 1-Due Date
Sep.7	
Aug.31	Home Work-Due Date
Aug.24	Home Work-Due Date

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GROUP B

The week of:	
Dec.7	No Class
Nov.30	No Class
Nov.23	**Thanksgiving**
Nov.16	Exp-6: Radiation
Nov.9	No Class
Nov.2	Exp-5: Conductivity
Oct.26	No Class
Oct.19	Exp-4: Forced Convection-2
Oct.12	No Class
Oct.5	Exp-3:Forced Convection-1
Sep.28	No Class
Sep.21	Exp-2: HX-2
Sep.14	No Class
Sep.7	Exp-1: HX-1
Aug.31	No Class
Aug.24	Introduction and Error Analysis

Dec.7	Lab Report 6-Due Date
Nov.30	
Nov.23	
Nov.16	Lab Report 5-Due Date
Nov.9	
Nov.2	Lab Report 4-Due Date
Oct.26	
Oct.19	Lab Report 3-Due Date
Oct.12	
Oct.5	Lab Report 2-Due Date
Sep.28	
Sep.21	Lab Report 1-Due Date
Sep.14	
Sep.7	
Aug.31	Home Work-Due Date
Aug.24	Home Work-Due Date

Grading Policy:

Attendance (20%): total of 20 points
Homework (10%): total of 10 points
Reports (55%): total of 55 points
Exam (15%): total of 15 points, Final exams are scheduled according to the UTD academic calendar and cannot be rescheduled. No individual exam requests will be accommodated.

Lab report Rubric	
Cover page	2 points
Sample calculations	10 points
Experiments results	10 points
Graphs	
Experiment 1 and 2	12 points → 4 graphs, each 3 points.
Experiment 3	10 points → 2 graphs, each 5 points.
Experiment 4	10 points → 4 graphs, each 3 points.
Experiment 5	10 points → 1 graph 10 points.
Experiment 6	10 points →1 graph 10 points.
Discussion	
Experiment 1 and 2	13 points.
Experiment 3	10 points.
Experiment 4	8 points.
Experiment 5	10 points.
Experiment 6	10 points.
Uncertainty Analysis – For all the experiments	
Kline and McClintock equations	10 points.
Samples calculations	10 points.
Error values for all experimental runs	5 points.
Raw data and result table – For all the experiments	
Picture of raw data taken in the lab during the experiment.	5 points.
Results tables (The tables must include units)	10 points.
References and Appearance – For all the experiments	
References	5 points
Appearance and organization (formatting of tables and charts, presentation of data, organization of report, Grammar, spelling, punctuation etc.)	8 points.

For Group Reports: Only ONE of the members needs to submit the report on behalf of the group.

If a member doesn't participate in preparing the report, she/he will need to prepare and submit a solo report.

Course & Instructor Policies

- NO MAKEUP CLASS (ONLY WITH OFFICIALLY ACCEPTABLE DOCUMENTATION, student can make it up in the different session).
- Regular and punctual class attendance is expected.
- If you do not participate in your group report preparation, you will have to submit a solo report.
- Late reports will not be accepted.
- All announcements will be posted on **eLearning**. This is the student's responsibility to check the course eLearning website regularly.
- The students are expected to participate in class discussions and follow the instructor guidelines.

Accommodations for Students Who Must Isolate or Quarantine Due to COVID-19

To keep the UT Dallas community as safe as possible, the University requires students who test positive for COVID-19 or who are close contacts as determined by the campus contact tracing program to isolate or quarantine as applicable. Faculty will be notified by the Dean of Students' Office if a student in their class has been required to isolate (positive case) or quarantine (exposed). Lectures will be available for those students during the period the students must isolate or quarantine.

Student Resources

Students who have tested positive for COVID-19 or may have been exposed should not attend class in person and should instead follow required disclosure notifications as posted on the university's website (see "What should I do if I become sick?")

COVID-19 Resources

Comets United webpage: check frequently

FAQ: check out the FAQs and reach out to your instructor or academic advisor if answers are not included

Student Resources: a variety of resources are available to help students to obtain counseling, health care, and academic support.

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."

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 http://go.utdallas.edu/syllabus-policies for these policies.

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