Course Syllabus
MECH 4380-001, HVAC Systems

Course Information

MECH 4380, HVAC Systems — Spring 2022
Tuesday and Thursday: 8:30AM–9:45AM
Lecture Room: ECSW 3.250 (or by TEAMS for the first weeks as announced by UTD)
Starts: January 18, 2022 — **Ends:** May 5, 2022

Professor Contact Information

Dani Fadda, Ph.D., P.E.
Office Phone**:** 972-883-4626 — Office: ECSW 2.150C
Office Hours: Thursday 10-11AM — Email**:** fadda@utdallas.edu

TA Contact Information

Name: Shown in eLearning — Office: Shown in eLearning
Office Hours: Shown in eLearning — Email: Shown in eLearning

Course Pre-requisites

Pre-requisite(s)*:* MECH 3320, Heat Transfer

Description:

This course is an introduction to the analysis and design of heating, ventilation, air conditioning, and refrigeration systems. The emphasis is on the application of fundamental heat transfer and fluid mechanics principles to the analysis of HVAC systems. Topics include: introduction to human comfort and health requirement, heating and cooling load calculations and air distribution systems.

Course Learning Outcomes (CLOs)

CLO1: Demonstrate an understanding of the HVAC principles, importance of HVAC technology and practice of thermal comfort
CLO2: Develop psychrometrics of moist air and apply to HVAC processes.
CLO3: Apply heat transfer and fluid dynamics concepts to perform building envelope loads (due to conduction, convection, radiation and air leakage) and select the proper HVAC units accordingly
CLO4: Understand the principles and requirements of air ventilation
CLO5: Apply fluid mechanics concepts and develop techniques for the analysis of duct systems and room air-distribution systems
CLO6: Predict seasonal and annual energy consumption for buildings

Textbooks and Materials

Required Book: F.C. McQuiston and J.D. Parker, Heating, Ventilating, and Air Conditioning Analysis and Design, John Wiley & Sons, Inc. 6th Edition, 2005. ISBN: 9780471470151.
Other Required Materials: Pencil and notebook for writing notes in class, scientific calculator, computer, and access to a scanner.

Schedule

A schedule will be uploaded to eLearning.

Exams

Make-up exams will only be given with instructor approval, which may be granted under unusual circumstances (e.g., sickness with a doctor's letter).

Assignments

The assignment are accepted if submitted through eLearning before the due date. If an assignment is missed due to illness, the student must provide a note from a doctor.

Email

Email must be sent from your UTD email account to UTD email address of the instructor or TA with the subject of the email as: MECH 4380. Email shall not be used for submitting assignments.

Lectures

Concepts will be discussed using PowerPoint slides and written notes using an overhead projector. Students are required to take hand-written notes in the class.

Grading policy

Final letter grades will be assigned according to the eLearning standards, which are subject to change at the discretion of the instructor. The grades will be based on the following:

Assignments:	35%
Exams:	45%
Project:	20%

Policies and Procedures for Students

The University of Texas at Dallas provides a number of policies and procedures designed to provide students with a safe and supportive learning environment.

Brief summaries of the policies and procedures are provided for you at https://go.utdallas.edu/syllabus-policies.

The descriptions shown in this syllabus are subject to change at the discretion of the professor.