

Course Syllabus

MECH 3370.001
APPLIED THERMODYNAMICS
Fall 2016
Tue, Thu 10:00-11:15 in ECSS 2.311

Professor Contact Information

Fatemeh Hassanipour
Office location: ECSN 2.524, Phone: 972-883-2914, Email: fatemeh@utdallas.edu
Office Hours: Tuesday, Thursday 9:00-10:00 AM

TA-1: Niloofar Mohammadi
Office location: ECSN 2.232, Email: nxm134130@utdallas.edu
Office Hours: Monday, Wednesday 11:30 AM -12:30 PM

TA-2: Mohammad Aliakbarimiyahaleh
Office location: ECSN 2.232, Email: mxa148530@utdallas.edu
Office Hours: Tuesday, Thursday 11:30 AM -12:30 PM

Pre-requisite: Mathematics, Thermodynamics

Course Description: This course provides an extended treatment of the fundamentals of thermodynamics as related to energy conversion, storage, transmission and use. Industrial topics may include: conventional and sustainable power generation or efficiency in refrigeration, air-conditioning and heating applications. Further applications may include: studies of internal combustion engines, heat pump systems, and other energy conversion machines.

Student Learning Objectives/Outcomes

1. Be able to analyze vapor power systems, gas turbine power plants, refrigeration and heat pump systems for improving performance and thermal efficiency
 2. Describe ideal gas mixture compositions, relate pressure, volume and temperature, and analyze systems involving gas mixture processes such as air conditioning and cooling tower processes.
 3. Demonstrate understanding of how tables of thermodynamic properties are constructed.
 4. Demonstrate understanding of combustion, theoretical air, enthalpy of formation and analyze systems involving chemical reactions.
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Required Textbooks and Materials: Michael J. Moran and Howard N. Shapiro, Fundamentals of Engineering Thermodynamics, 7th Edition John Wiley.

Suggested Course Materials: Class notes

Assignments & Academic Calendar

Quiz dates are Thursdays Sept. 1st, 15th, 29th, Oct. 13th, 27th, Nov. 10th, Dec. 1st (every other Thursday starting September.) You are allowed to miss two quiz.

Midterm I, October 6th

Midterm II, November 17th

Final Exam, based on UTD schedule: Multiple choice questions, comprehensive

Grading Policy: Quizzes (10 points), Homework (15points), Midterm (I) (30points), Midterm (II) (30points), Final Exam (Comprehensive) (15points)

Course & Instructor Policies

- **NO MAKEUP EXAMS** will be given unless in extreme situations with an officially documented excuse.
 - All Exams will be **CLOSED BOOK, CLOSED NOTES. NO ELECTRONIC DEVICES OF ANY KIND** (including laptop, iPods, cell phones, blackberrys, etc.) will be allowed in exam rooms during exams.
 - Homework are due at the beginning of class on the due date. **Late homework will not be accepted. NO DIGITAL HOMEWORK WILL BE ACCEPTED** unless in extreme situations with an officially documented excuse.
 - All announcements, e.g. HW, quiz and exam dates will be posted on **eLearning**. This is the student's responsibility to check the course eLearning website regularly.
 - Class attendance required.
 - **No cell phones, iPods, laptops or other devices in class.** The students are expected to participate in class discussions and follow the instructor guidelines.
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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.*