

## ME 435 – Thermodynamics for Non-ME

**Pre-requisite:** Math 211- Calculus 111; Phys 111- Physics 1

### **Required Text books and related materials**

1. Y.Cengel and M.Boles, *Thermodynamics, An Engineering Approach*, 7th Ed. McGraw-Hill, 2011.
2. Property Table to Accompany 7th Ed. McGraw Hill, 2011
3. Software: EES, McGraw-Hill

### **Weekly Course Arrangements**

Week	Contents	HW Assignments
1	Introduction and Basic Concepts; temperature	Assignment 1 (4 problems)
2	First law of thermodynamics: work and heat; Ideal gases	
3	Properties of Pure Substance; phase changes	Assignment 2 (6 problems)
4	First law applications of Closed System	
5	First law analysis for open systems, steady and transient processes	Assignment 3 (6 problems)
6	First law applications of Open System	
7	Review of First Law	-
8	Mid-Term ; MT Solutions	
9	Second-Law of Thermodynamics (Closed System); Entropy	Assignment 4 (6 problems)
10	Second-Law Analysis for a Control Volume;	
11	Power systems and thermodynamic cycles	Assignment 5 (6 problems)
12	Refrigeration systems and reversed thermodynamic cycles	
13	Review of Second Law	-
14	Introduction to Heat Transfer	-

### **Grading Polices**

(1) Grade Calculations

- 20% Homework (5)
- 10% Class Attendance (28)
- 30% Mid-Term (1)
- 40% Final Examination (1)

Final Grade is based on the total grade.

(2) Homework Requirements

- (a) Assignments are due biweekly.
  - (b) No late submission is accepted.
  - (c) Homework grade is based on “efforts” rather than “correctness”.
  - (d) Homework will be returned in about one week.
- (3) Mid-Term and Final Exam Requirements
- (a) Only basic concepts and simple calculations are involved.
  - (b) No tele-communicable tools, such as cell phone, lab-top, are allowed during exams. No share of calculator.
- (4) Class Attendance

In order to ensure an appropriate class attendance credit, students are required to check in (or out) for each class. No make-up class attendance check-in.

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