

# ME 371

## Thermodynamics -I-

### 2<sup>nd</sup> Semester 1428/1429 H

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#### Course Objectives:

Thermodynamics is a basic course that serves as the background for many thermo-fluid courses. The main objective of the course is to provide the engineering student with the basic principles of thermodynamics through the study of the first and second laws of thermodynamics and applications.

**Textbook:** Thermodynamics: An Engineering Approach, by Cengel and Boles, 5<sup>th</sup> Edition.

#### Course Content

Chapter		Sections Covered	Problems solved in	
			Tutorial	Homework
1	Introduction and Basic Concepts	1.1-1.9	1-15c to 1-17c 1-18c to 23c 1-26c to 1-29 1-90 to 1-91	1-1c to 1-2c 1-25c 1-30 to 1-32 1-86 to 1-89
2	Energy, Energy Transfer, and General Energy Analysis	2.1-2.8	2-1c to 2-7 2-15 to 2-22: even 2-33, 2-36, 2-37	2-1c to 2-14 2-15 to 2-22: odd 2-34, 2-35, 2-38
3	Properties of Pure Substances	3.1-3.7	3-1 to 3-33: even 3-34, 3-52 3-65 to 3-76: even	3-1 to 3-33: odd 3-35, 3-48 3-65 to 3-76: odd
4	Energy Analysis of Closed Systems	4.1-4.5	4-6,4-8,4-9,4-12, 4-21,4-27,4-30, 4-34, 4-39,4-52, 4-55,4-65,4-66	4-1 to 4-5 4-7,4-11,4-13,4- 37,4-54,4-63,4-67
5	Mass and Energy Analysis of Control Volumes	5.1 to 5.4	5-6,5-7,5-29,5- 31,5-33,5-47,5- 64,5-73,5-81,5-84	5-1 to 5-5, 5-8, 5-24 to 5-28 5-32,5-36,5-50, 5-71,5-83
6	The Second Law of Thermodynamics	6.1 to 6.11	6-17,6-18,6-20, 6-35,6-38,6-46, 6-49,6-51	6-1 to 6-15 6-19,6-21 6-28 to 6.33 6-37,6-45
7	Entropy	7.1-7.7 7.9,7.10, 7.12-7.13	7-1 to 7-33: even 7-24,7-26,7-32,7- 44,7-66,7-69,7- 86,7-101	7-1 to 7-33: odd 7-25,7-27,7-38,7- 46,7-65,7-72,7- 85,7-102

#### Grading

2 Midterm Exams: 40

Assignments and quizzes: 10

Final Exam: 50

Midterm I: Monday 7 to 8:30 PM 1/04/1429 (7/04 /2008)

Midterm II: Monday 7 to 8:30 PM 21 /05 /1429 (26 /05 /2008)

<http://faculty.ksu.edu.sa/Zeitoun/default.aspx>