Instructor: Dr. Mohamed Ali
Office: 2C73
Phone: 467-6672

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.

Credit hours
3


Course Content

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Sections</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction and Basic Concepts</td>
</tr>
<tr>
<td>2</td>
<td>Energy, Energy Transfer, and General Energy Analysis</td>
</tr>
<tr>
<td>3</td>
<td>Properties of Pure Substances</td>
</tr>
<tr>
<td>4</td>
<td>Energy Analysis of Closed Systems</td>
</tr>
<tr>
<td>5</td>
<td>Mass and Energy Analysis of Control Volumes</td>
</tr>
<tr>
<td>6</td>
<td>The Second Law of Thermodynamics</td>
</tr>
<tr>
<td>7</td>
<td>Entropy</td>
</tr>
<tr>
<td>8</td>
<td>Vapor Power Cycles</td>
</tr>
<tr>
<td>9</td>
<td>Refrigeration Cycles</td>
</tr>
</tbody>
</table>
Midterm I: Tuesday, 04:00-05:30 PM 21/4/1431-6/4/2010
Midterm II: Wednesday, 04:00-05:30 PM 12/06/1431-26/05/2010

**Design Content:** None
**Lectures:** 100%
**Laboratory Portion:** None

**Assessment Tools:**
- Homework + quizzes: 10%
- 2 Midterm Exams: 50%
- Final Exam: 40%

**Estimated ABET Category Content:**
- Mathematics and Basic Science: 0 credit units or 0%
- Engineering Science: 3.0 credit units or 100%
- Engineering Design: 0 credit units or 0%

**Prepared by**

Prof. Mohamed Ali [mali@ksu.edu.sa]

**Date:** March 3, 2010
**Revised:**