

**ME 265: Thermal Engineering and Heat Transfer****4.00 Credit Hours**

Basic concepts and definitions; Sources of energy: conventional and renewable;

**Thermodynamics: fundamental concepts and laws, non-flow and flow processes; thermodynamic cycles;**

**internal combustion engines, gas turbines,**

**Introduction to: steam generating units,** steam turbines,

refrigeration and air conditioning systems.

Introduction to heat transfer; Modes of heat transfer; Study and unsteady state heat conduction and radiation heat transfer, Convection heat transfer; Natural and forced convection; Heat exchangers.

**Tentative Lecture Schedule**

<i>Class</i>	<i>Topic</i>
<i>Hour-2</i>	Thermodynamics – Basic Definitions
<i>Hour-6</i>	Thermodynamics – Basic Definitions
<i>Hour-10</i>	Laws of Thermodynamics
<i>Hour-14</i>	Non-flow Processes
<i>Hour-18</i>	Flow Processes
<i>Hour-22</i>	Internal Combustion Engines
<i>Hour-26</i>	Internal Combustion Engines
<i>Hour-30</i>	Internal Combustion Engines
<i>Hour-34</i>	Thermodynamic Cycles - Gas Power
<i>Hour-38</i>	Gas Turbines
<i>Hour-42</i>	Jet Engines
<i>Hour-46</i>	Steam Generating Units
<i>Hour-48</i>	Steam Generating Units
<i>Hour-52</i>	Thermodynamic Cycles - Vapour Power

**Thermodynamics – An Engineering Approach**

– Yunus A.Cengel and Michael A. Boles (McGraw-Hill)

**Engineering Thermodynamics** – G. F. C Rogers, Y. R. Mayhew (Longman)

**A Text Book of Thermal Engineering** --- R. S. Khurmi

**Heat Engineering** --- V. P. Vasandani and D. S. Kumar