

Mechanical and Industrial Engineering 230
Spring 2012

Thermodynamics

TTh 11:15-12:30PM Elab 304

This course is designed to be a one semester introduction into engineering thermodynamics with an emphasis on elements of classical thermodynamics. Standard concepts such as heat, work, internal energy and enthalpy will be introduced. Thermodynamic properties of gases, liquids and solids will be presented and the equations of state for ideal and real gases will be developed and applied. The concepts of control volume analysis, the conservation of mass and energy and the second law of thermodynamics will be discussed and applied. Finally several fundamentally important engineering applications such as heat engines, refrigeration and other power cycles will be outlined.

<i>Instructor</i>	Professor Jonathan Rothstein Gunness Labs 16 577-0110 rothstein@ecs.umass.edu Office hours: Wednesday 4:30-5:30PM Other times by appointment
<i>Teaching Assistants</i>	None
<i>Course Text</i>	<i>Thermodynamics – An Engineering Approach 7th Edition</i> , Cengel and Boles, McGraw Hill., New York, 2010.
<i>Web Page</i>	http://www.ecs.umass.edu/mie/faculty/rothstein/mie230.htm
<i>Grading</i>	Homework 15% Evening Exams (2) 45% Final Exam 35% Class Participation 5%
<i>Homework</i>	Assigned and collected every Tuesday. Solutions posted on webpage
<i>Prerequisites</i>	Physics 151 and 153, Math 233