

Mechanical and Industrial Engineering 230  
Fall 2009

## Thermodynamics

TTh 11:15-12:30PM ElabII 119

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.

*Instructor*

Professor Jonathan Rothstein  
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Office hours: Mondays 3:00-5:00PM  
Other times by appointment

*Teaching Assistants*

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TA#2 - TBA

*Course Text*

*Fundamentals of Engineering Thermodynamics 6<sup>th</sup> Edition*, M. J. Moran and H. N. Shapiro, John Wiley & Sons, Inc., New York, 2008.

*Web Page*

<http://www.ecs.umass.edu/mie/faculty/rothstein/mie230.htm>

*Grading*

Homework	15%
Evening Exams (2)	45%
Final Exam	35%
Class Participation	5%

*Homework*

Assigned and collected every Tuesday. Solutions posted on webpage

*Prerequisites*

Physics 151 and 153, Math 233