



WISCONSIN

UNIVERSITY OF WISCONSIN-MADISON

University of Wisconsin - Madison
College of Engineering [EGR]
Last Offered: 2014 Fall [1152]
Direct Link to this Syllabus :

<http://aefis.engr.wisc.edu/index.cfm/page/CourseAdmin.ViewABET?coursecatalogid=426&pdf=True>

1. **M E 561, Intermediate Thermodynamics**

2. **Credits : 3 Contact Hours : 2.5**

3. **Textbook and Materials :** Thermodynamics; Klein and Nellis; 1; 2011

4. **Specific Course Information :**

- a. **Brief description of the content of the course (Course Catalog Description) :** Fundamentals; phase and chemical equilibria; availability; thermodynamic relationships.
- b. **Pre-requisites or Co-requisites :** ME 364 or equivalent or consent of instructor
- c. **This is a Elective course.**

- **Specific Goals for the Course :**

- a. **Course Outcomes :**

- 1. Develop a complete understanding of the concepts underlying the first and second laws.
- 2. Couple time and rate mechanisms into thermodynamic analyses
- 3. Improve skills in using a computer to help solve practical problems

- **ABET Student Learning Outcomes :**

- (e) Ability to identify, formulate and solve engineering problems.
- (f) Understanding of professional and ethical responsibility.
- (h) The broad education necessary to understand the impact of engineering solutions in a global and societal context.
- (i) Recognition of the need for and an ability to engage in life-long learning.
- (j) Knowledge of contemporary issues.
- (k) Ability to use the techniques, skills and modern engineering tools necessary for engineering practice.

- **Brief List of Topics to be Covered :**

Fundamental Concepts

First Law Second Law - Classical Approach

Finite Time Considerations

Second Law Applications

Combustion Availability

Equations of State Property Relations

Generalized Property Charts and Equations

Pure Component

Phase Equilibrium