MME 3308

Applied Chemical Thermodynamics

1. MME 3308, Applied Chemical Thermodynamics

2. Catalog Description: "First, second, and third laws of thermodynamics applied to materials systems. Topics include thermochemistry, chemical equilibria, solutions, activity, and electrochemical potential."

3. Prerequisite: BE 2375 with a grade of "C" or better.


5. Course Objectives: At the end of this course students will be able to apply thermodynamics principles to chemical (materials) systems. Specifically, they will be able to perform chemical energy balances, determine the conditions for chemical equilibrium as a function of temperature, and understand phase equilibrium and phase diagrams.

6. Topics: First, second, and third laws of thermodynamics; chemical energy balances; chemical equilibrium; phase equilibria.

7. Class Schedule: The course meets three times a week for 50 minutes per class. The total number of class sessions is 42.

8. Contribution to the Professional Component: This course is taught primarily as a basic science, and therefore, contributes mostly to outcome A.

9. Relationship to Program Objectives: An understanding of chemical thermodynamics is essential for a metallurgical/materials engineer, and therefore, this course is primarily related to objective 1