
COURSE NAME/ NUMBER

LEARNING OBJECTIVES / GOALS / OUTCOMES/ LEARNING OUTCOMES:

Students will become familiar with fundamental principles of chemical kinetics and thermodynamics and will learn how to use them to analyze chemical processes and phase equilibria.

METHODS:

Lectures, labs, group problem-solving sessions.

PRIOR LEARNING ASSESSMENT RECOGNITION (PLAR):

Credit can be awarded for this course through PLAR YES _____ NO X

METHODS OF OBTAINING PLAR:**TEXTBOOKS, REFERENCES, MATERIALS:**

Atkins, *Physical Chemistry*, 6th ed., Freeman and Co., 1998

SUPPLIES / MATERIALS:**STUDENT EVALUATION:**

Labs	20%
Midterms	40%
Final	40%

COURSE CONTENT:

1. Introduction to Thermodynamics. The Zeroth Law of Thermodynamics.
2. The First Law of Thermodynamics.
3. Thermochemistry. Thermodynamic cycles.
4. Thermodynamic Potentials. Spontaneity and Equilibrium.
5. Phase Equilibria.
6. Chemical Equilibria.
7. Introduction to Chemical Kinetics. Rate laws.
8. Complex kinetics. Enzyme kinetics.
9. Collision theory. Transition state theory