

# Bemidji State University

## CHEM 4711: Physical Chemistry I

### A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: \*.\*

Lab Hours/Week: \*.\*

OJT Hours/Week: \*.\*

Prerequisites: None

Corequisites: None

MnTC Goals: None

Fundamental understanding of chemical and physical properties of atoms and molecules through quantum mechanical and classical approaches. Prerequisites: CHEM 2212 and PHYS 2101.

**B. COURSE EFFECTIVE DATES:** 08/02/2010 - Present

### C. OUTLINE OF MAJOR CONTENT AREAS

1. Chemical Equilibrium
2. Complex Biochemical Processes
3. First Law of Thermodynamics
4. Ion & Electron Transport
5. Phase Equilibria
6. Rate Laws
7. Reaction Kinetics
8. Second Law of Thermodynamics
9. The Rates of Reaction
10. Thermochemistry
11. Thermodynamics

### D. LEARNING OUTCOMES (General)

1. be able to predict how two & three component systems will respond to composition, temperature, and pressure changes.
2. be able to analyze kinetics data, in order to gain insight into the microscopic processes occurring.

### E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

None

### F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

### G. SPECIAL INFORMATION

None noted