Bemidji State University

CHEM 2212: Principles of Chemistry II

A. COURSE DESCRIPTION

Credits: 4

Lecture Hours/Week: *.*

Lab Hours/Week: *.*

OJT Hours/Week: *.*

Prerequisites: None

Corequisites: None

MnTC Goals: Goal 03 - Natural Science

Continuation of the development of principles of inorganic, physical, solution, and gas phase chemistry begun in CHEM 1211. The laboratory component introduces techniques, methods, and instrumentation. Intended for chemistry majors and minors, biology majors, preprofessional students, and open to any student meeting the prerequisites wishing to fulfill their Liberal Education requirement. Prerequisite: CHEM 1111 or CHEM 2211. Liberal Education Goal Area 3 (LC).

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

C. OUTLINE OF MAJOR CONTENT AREAS

1. Intermolecular Forces
2. Kinetics
3. Equilibrium
4. Acid-Base Equilibria I
5. Acid-Base Equilibria II
6. Solubility Equilibria
7. Thermodynamics
8. Electrochemistry
9. Nuclear Chemistry
10. Solutions

D. LEARNING OUTCOMES (General)

1. be provided with a background for advanced courses in physical, organic, inorganic, and biochemistry. This includes coverage of equilibrium, thermodynamics, electrochemistry, kinetics, nuclear reactions, nomenclature of organic compounds, and elementary biochemistry concepts.
2. develop higher order thinking skills through solving of problems related to chemical equilibrium, thermodynamics, electrochemistry, and kinetics..
3. be exposed to ethical questions which arise in the chemical sciences.
4. be encouraged to communicate knowledge and ideas relating to chemistry in a clear and concise manner. This includes written communication through essay questions on exams and oral communication during class discussions. In addition, students will be given the opportunity to interact collaboratively with each other during group problem solving sessions.

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

Goal 03 - Natural Science

1. Demonstrate understanding of scientific theories.
2. Formulate and test hypotheses by performing laboratory, simulation, or field experiments in at least two of the natural science disciplines. One of these experimental components should develop, in greater depth, students' laboratory experience in the collection of data, its statistical and graphical analysis, and an appreciation of its sources of error and uncertainty.
3. Communicate their experimental findings, analyses, and interpretations both orally and in writing.
4. Evaluate societal issues from a natural science perspective, ask questions about the evidence presented, and make informed judgments about science-related topics and policies.

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

None noted