

Master Syllabus

CHE 1221 - General Chemistry II

Division: Science, Mathematics and Engineering

Department: Chemistry

Credit Hour Total: 5.0

Lecture Hrs: 4.0 **Lab Hrs:** 3.0

Prerequisite(s): CHE 1211

Date Revised: April 2016

Course Description:

The second half of a university-parallel course in chemistry for the science or engineering major. Topics include states of matter, solutions, chemical reaction kinetics, chemical equilibrium, acid/base chemistry and nuclear chemistry. Four classroom hours, three lab hours per week.

General Education Outcomes:

- Critical Thinking/Problem Solving Competency

Course Outcomes:

Chemical Reaction Kinetics

Demonstrate and apply the principles of reactions rates, rate laws and factors affecting the rates of chemical reactions.

Assessment Method: Locally developed exams

Performance Criteria: 70% correct responses on exam questions

States of Matter

Understand the qualitative and quantitative aspects of gases, liquids and solids.

Assessment Method: Locally developed exams

Performance Criteria: 70% correct responses on exam questions

Chemical Equilibrium

Understand and apply the qualitative aspects of chemical equilibrium, equilibrium constants and the application to acid/base chemistry and solubility.

Assessment Method: Locally developed exams

Performance Criteria: 70% correct responses on exam questions

Solutions

Understand the properties of solutions, units of concentration, solubility and application in the form of solution preparation.

Assessment Method: Locally developed exams

Performance Criteria: 70% correct responses on exam questions

Nuclear Chemistry

Demonstrate understanding of modes of nuclear decay, fission and fusion reactions, half-life and the rates of nuclear decay.

Assessment Method: Locally developed exams

Performance Criteria: 70% correct responses on exam questions

Acid/Base Chemistry

Demonstrate understanding of the nature of acids and bases and their reactions, and the strength of acids and bases.

Assessment Method: Locally developed exams

Performance Criteria: 70% correct responses on exam questions

Outline:

States of Matter Solutions Chemical Reaction Kinetics Chemical Equilibrium Acid/Base Chemistry Nuclear Chemistry Electrochemistry