

## 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:** July 2017

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#### 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, electrochemistry and nuclear chemistry. Four classroom hours, three lab hours per week.

#### General Education Outcomes:

- Critical Thinking/Problem Solving Competency

#### Course Outcomes:

##### 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 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

##### 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