

## Master Syllabus

### CHE 1211 - General Chemistry I

**Division:** Science, Mathematics and Engineering

**Department:** Chemistry

**Credit Hour Total:** 5.0

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

**Prerequisite(s):** OR MAT 1580OR MAT 2270 MAT 0300OR MAT 1450OR MAT 1470OR MAT 1570OR  
MAT 2280OR MAT 2290

**Date Revised:** July 2017

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### Course Description:

A university-parallel course in chemistry for the science major. The first half of a comprehensive first-year survey of chemistry. Topics include the basics of matter, atoms and molecules, chemical reactions, bonding, molecular geometry and gases. Students registering for this course should have previously taken high school chemistry or equivalent. Four classroom hours, three lab hours per week.

### General Education Outcomes:

- Critical Thinking/Problem Solving Competency

### Course Outcomes:

#### Bonding

Demonstrate an understanding of atoms abilities to build molecules by forming bonds. Apply this understanding to types of bonding and molecular polarity.

**Assessment Method:** Locally developed exams

**Performance Criteria:** 70% correct responses on exam questions

#### Matter, Measurement and Significant Figures

Demonstrate knowledge of the qualitative and quantitative treatment of matter and its properties.

**Assessment Method:** Locally developed exams

**Performance Criteria:** 70% correct responses on exam questions

#### Atoms and Molecules

Demonstrate basic knowledge of atoms, their fundamental particles and their tendency to form molecules, and the basic organization of the periodic table.

**Assessment Method:** Locally developed exams

**Performance Criteria:** 70% correct responses on exam questions

#### Energy Changes of Chemical Processes

Understand and apply the basic concepts of energy and enthalpy and their relationships to chemical processes.

**Assessment Method:** Locally developed exams

**Performance Criteria:** 70% correct responses on exam questions

#### Organic Chemistry and Biochemistry

Demonstrate an understanding of carbon bonding and the structure and function of organic molecules and biomolecules.

**Assessment Method:** Locally developed exams

**Performance Criteria:** 70% correct responses on exam questions

#### Atomic Structure

Demonstrate an understanding of the makeup of atoms, their quantum levels and their interaction with or production of electromagnetic radiation.

**Assessment Method:** Locally developed exams

**Performance Criteria:** 70% correct responses on exam questions

#### Chemical Reactions

Understand and apply the qualitative and quantitative aspects of chemical reactions.

**Assessment Method:** Locally developed exams

**Performance Criteria:** 70% correct responses on exam questions

### Outline:

Matter and Measurement Atoms and Molecules Chemical Reactions Energy Changes of Chemical/Physical Processes Atomic Structure Bonding Organic Chemistry and Biochemistry