Sinclair Community College
444 E. Third St.
Dayton, OH 45402

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): MAT 1280 OR MAT 1365OR MAT 1370OR MAT 1450OR MAT 1470OR MAT 1570OR MAT 1580OR MAT 2270OR MAT 2280OR MAT 2290

Date Revised: April 2016

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, organic chemistry and biochemistry. 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

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 MoleculesChemical ReactionsEnergy Changes of Chemical/Physical ProcessesAtomic StructureBondingOrganic Chemistry and Biochemistry