General Chemistry for Science Majors Sequence A

|  |  |
| --- | --- |
| **C-ID Number** | CHEM 120 S |
| **Discipline** | Chemistry |
| **Date Approved** | April 29, 2011 |

## General Course Description

This is a one-year course sequence in chemistry intended for majors in the natural sciences (chemistry, biochemistry, biology, physics, pre-medicine), mathematics, and engineering.

## Minimum Units

10 (at least 5, incl at least 1 lab for each sem.)

## Any rationale or comments

## Advisories/Recommendations

None specified

## Course Content

The complete one-year course must include the following topics:
First semester

Nomenclature
Atomic Structure
Quantum Theory
Periodic Properties
Chemical Reactions
Stoichiometry
Gas Laws
Molecular Structure and Bonding
States of Matter
Solutions

Topics for second semester:

Equilibrium
Acids and Bases
Electrochemistry
Thermodynamics
Coordination Chemistry
Descriptive Chemistry

Floating Topics to be covered within the sequence.

Kinetics
Nuclear Chemistry
Organic Chemistry

It is strongly recommended that both semesters be completed at a single institution before transfer.

## Laboratory Activities

The laboratory sequence will support the above topics including both qualitative and quantitative experiments, analysis of data and error propagation.

## Course Objectives

At the conclusion of this course, the student should be able to:
The American Chemical Society (ACS) General Chemistry Guide and the General Chemistry examinations provide information on topics and indicate an appropriate level of this sequence of courses, including learning goals and objectives. At the conclusion of this course, each student should be able to employ standard laboratory techniques appropriate to the course content, such as titration.

## Prerequisites

Intermediate Algebra; CHEM 110 is a prerequisite for the second semester of General Chemistry

## Corequisites

None

## Methods of Evaluation

ExaminationsHomeworkLab workPortfoliosProjectsWritten papers and/or reportsQuizzes

## Sample Textbooks

Chemistry, McMurry and Fay, Prentice Hall
General Chemistry: The Essential Concepts, Chang and Overby, McGraw-Hill
Principles of Chemistry: A Molecular Approach, Tro, Prentice Hall
Chemical Principles, Atkins and Jones, W.H. Freeman
Chemistry in the Laboratory, Postma, Roberts and Holenberg, W.H. Freeman
Chemistry: The Central Science, Brown , LeMay, Bursten, Murphy, and Woodward, Prentice Hall
Laboratory Experiments for Chemistry: The Central Science, Brown , LeMay, Bursten, Murphy, Woodward, Nelson and Kemp,  Prentice Hall

## Notes