CHEM 102: Principles of Chemistry II

This detailed course description provides information about course topics & content. It is not a course syllabus. Summer 2013 course syllabi are updated in the spring, and may not be available until summer classes begin.

Instructor Information

Instructor	Email	Course Format	Number of Credits
Wendy Olson	wolson001@umbc.edu	Lecture, Discussion	4

General Information

Course Format Other

Students will attend two 3-hour lectures and two 2-hour discussion sections per week.

Delivery Format

In-Person

Prerequisite:

CHEM 101 (pre)

Course Materials

Currently Used Materials

• Atoms First, 1st edition, Burge/Overby, McGraw-Hill

Course Objectives/Learning Outcomes:

The goal of this course is to provide a basic background and understanding in the theory and principles of Chemistry (e.g., chemical and physical equilibrium, liquids and solids, elementary thermodynamics, electron and proton transfer reactions, electrochemistry, chemical kinetics, and the further study of the periodic properties of the elements).

Since this material is more quantitative than that of CHEM 101, it is essential that you are familiar with mathematical techniques such as logarithms, exponential notation, and quadratic equations. While calculus is not a prerequisite for this class, some of the topics will deal with rates, slopes, and other concepts you may have learned in calculus class. Review of these topics from your math and physics courses – you will be using them in problem solving.

Potential Topics Covered:

Gases

IMFs and the Properties of Liquids and Solids

Solutions

Kinetics: The Study of Rates of Reaction

Chemical Equilibrium - General Concepts

Acids and Bases

Equilibria in Solutions

Thermodynamics

Electrochemistry

Nuclear Chemistry

Instructions for Visiting Students:

Students must submit evidence that they have taken a course equivalent to CHEM 101, if they did not take CHEM 101 at UMBC.

Additional Information and Resources

Chemistry 102 is the second half of an introductory two-semester course primarily designed for those students who plan to continue their chemical education beyond the elementary level. We will find, however, that Chemistry 102 is a valuable experience not only for aspiring chemists, chemical engineers, medical doctors, dentists, pharmacists, and so forth, but for thoughtful students of all disciplines. You will also discover that chemistry is truly a central science.