

Course Objectives/Course Outline
Spokane Community College

Course Title: General Chemistry: w/Lab I

Prefix and Course Number: CHEM& 161

Course Learning Outcomes:

By the end of this course, a student should be able to:

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Course Outline:

- I. Atomic Theory
 - A. Quantum Theory
 - B. Atomic Structure
 - C. Electron Structure of Atoms
 - D. Electronic Configurations
 - E. Periodic Table
- II. Measurements in Chemistry
 - A. Making Measurements
 - B. Significant Figures
 - C. Converting Units
 - D. Laboratory Experiments, Gathering and Recording Observations, Analyzing Data, and Presenting Results in Written Form
- III. Ionic Compounds
 - A. Ion Formation
 - B. Ionic Bonds
 - C. Naming Ionic Compounds
 - D. Formulas of Ionic Compounds
 - E. Properties of Ionic Compounds
- IV. Molecular Compounds
 - A. Formation of Covalent Bonds
 - B. Covalent Compounds and Lewis Structures
 - C. Covalent Bonds and Electronegativity
 - D. Properties of Covalent Compounds
 - E. Naming Covalent Compounds
 - F. Formulas of Covalent Compounds
- V. Chemical Reactions
 - A. Balancing Chemical Equations
 - B. Predicting the Products of Reactions (Precipitation, Acid-Base Neutralization, and Redox Reactions)
 - C. Ionic Equations
 - D. Stoichiometric Calculations
- VI. Thermochemistry
 - A. Concepts of energy transfer
 - B. Enthalpy Changes in chemical reactions
- VII. Gases
 - A. Kinetic Molecular Theory

- B. Gas Laws
- VIII. Aqueous Solutions
 - A. The Solution Process
 - B. Properties of Solutions
 - C. Concentration
 - D. Solubility
 - E. Stoichiometric Calculations
- IX. Laboratories
 - A. Perform laboratory experiments pertaining to the above chemical concepts, record observations, gather and analyze data, and present the results in written form