



Division: Science and Technology

Effective Date: March, 2003

Department / Program
Area: Chemistry

Revision

New Course

If Revision, Section(s)

Revised: G,H

Date of Previous Revision: January 13, 2003

Date of Current Revision: March 7, 2003

CHEM 110

: The Structure of Matter

5

Subject & Course No.

Descriptive Title

Semester Credits

Calendar Description:

This
the modern view of atomic structure,

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Course Objectives / Learning Outcomes

Upon completion of this course, the students will:

1. Carry out measurements using the correct number of significant figures, and express the precision using absolute or relative uncertainties.
2. Given a set of experimental data, calculate the average value, the average deviation, and the standard deviation.
3. Solve stoichiometry problems of the following types: percentage composition/empirical formula, gram-gram or gram-volume (of a gas), solution stoichiometry, limiting reactant, problems involving two simultaneous or two sequential reactions.
4. Explain the Bohr theory of atomic structure.
5. Give the electronic configuration of any of the common elements in the periodic table.
6. Given a periodic table, explain the relative sizes, ionization energies, and electron affinities of the elements.
7. Explain and be able to apply the following concepts to covalent bonds: dipole moment, electronegativity, percent ionic character.
8. Draw Lewis electron dot structures for a given molecule. The molecule may exhibit resonance, or

molecules; Valence Bond Theory: hybridization, orbital diagrams; Molecular Orbital Theory: shapes and energies of molecular orbitals, bond order, intermolecular forces, and hydrogen bonding.

4. Nomenclature; identification and physical proper

Prior Learning Assessment and Recognition: specify whether course is open for PLAR