

Subject: ...
Date: ...
Name: ...
Section: ...
Course: ...
The student must ...
and express the ...
or relative uncertainty ...
given a set of ...
solve stoichiometry problems of the following types: percentage composition (empirical formula, gram-gram, or limiting reactant, problems involving two simultaneous or two sequential reactions).

problems using the ideal gas equation
the kinetic molecular theory of gases

4. solve problems
5. explain

Course Content:

1. Introduction and Review

Scientific method, measurement, Gas Laws, Kinetic Theory, Intermolecular forces and Solids, Deviation from Ideal Gas, Formulae, Stoichiometry, gas laws, kinetic molecular theory of gases, real gases.

2. Atomic Structure

Atomic structure, Atomic number, Atomic mass, Isotopes, Ionization energy, atomic size, electron affinity.

Bonding and Molecular Structure

Atomic bonding, covalent bonding, Lewis structures, electronegativity, polarity, resonance, shapes of molecules, Valence Bond Theory, hybridization, orbital diagrams, Molecular Orbital Theory, shapes and energies of molecular orbitals, bond order, intermolecular forces, and hydrogen bonding.

4. Coordination Compounds

Bonding and structure, isomerism.

5. Organic Chemistry

Nomenclature, Bonding, Stereoisomerism, Reaction Mechanisms, Alkyl Halides and Esters, Polymerization.

6. Nuclear Chemistry (Optional topic)

Nuclear Chemistry

Laboratory Content:

