

a-g Chemistry

Course Description:

This is an introductory course in theories and concepts of modern chemistry. The course should emphasize the structure of the atom, solutions and equilibrium, periodic properties, bonding and common reactions, acid-base reactions, and oxidation-reduction reactions. The student will be introduced to quantum mechanics, nuclear chemistry, and stoichiometry. The laboratory work should help students develop reasoning power, the ability to apply chemical principles; as well as acquaint students with chemical laboratory techniques.

It is strongly suggested that students take this course at the community college rather than through an independent study program in order to fulfill the University of California A-G requirement.

Prerequisite(s): Algebra 1, Physical Science and/or Life Science, Biology, or Physics.

Length of Course: One year required for graduation

Year in School Taken: 10, 11, or 12

Course Objectives/Details:

The course should include mastery of and lab work featuring the following topics:

- Scientific Method
- Atomic and Molecular Structure
- Chemical Bonds
- Conservation of Matter and Stoichiometry
- Gases and their Properties
- Acids and Bases
- Solutions
- Chemical Thermodynamics
- Reaction Rates
- Chemical Equilibrium
- Organic and Biochemistry
- Nuclear Processes

Methods for Evaluating Student Performance:

Evaluation of student performance is based on individual abilities, interests, and talents. Methods by which student progress is assessed will be through a variety and/or combination of methods. The methods available include but are not limited to the following:

- Monthly review of work by education specialist (credentialed teacher),
- Portfolios
- Parent facilitator and education specialist observation
- Student demonstrations,
- Student grades,
- Student work samples
- Written examination
- Research projects

Texts:

Chemistry: Concepts and Applications
Glencoe McGraw-Hill, 2000
ISBN: 0028282094

CA Edition of Glencoe Text:

Chemistry: Matter and Change, Ca Edition
Glencoe, 2007

Author(s) Dingrando, Tallman, Hainen, Wistrom
ISBN: 0-07-877237-0 TE: 0-07-877238-9

CA Edition of Holt Chemistry (2007)

SE 9780030-922046

TE 9780030-922053

Merill Chemistry, by Smith, Smoot, and Price

Glencoe McGraw-Hill, 1998

ISBN: 0028255267