

Chemistry



Grade Level(s) 10-12 (10 Credits)

- Meets high school graduation requirement for Physical science
- Meets the UC/CSU subject area "D" Lab Science requirements

General Information

Description

Chemistry is a college preparatory course designed as a survey of general chemistry concepts. Chemistry is the study of the composition, properties, and structure of matter. Chemistry also investigates the changes that matter undergoes.

The course will focus on building multi-level problem solving skills, the integration of mathematics as a predictive tool, and the formation of frameworks for solving word problems, and analysis of data in comparison to accepted scientific principles. The course will examine naming rules, structure and properties of common elements, ions and compounds. An emphasis is placed on learning general properties of matter and energy, and understanding its transformations to seek modern applications.

Course topics include:

- The Chemical and Physical Structure of Matter, and its Influence on Chemical, Physical and Nuclear Properties
- Chemical, Physical and Nuclear Changes in Matter
- Thermodynamic Properties, and Thermodynamic Changes (and they relate to changes in matter)
- Use of math as a tool for prediction and verification, including dimensional analysis
- Laboratory investigation safety, methods, equipment use, and analytical skills.

Expectations and Goals

Chemistry requires a 11th grade level reading comprehension and a strong work ethic for consistent out of class assignments. A strong background in algebra is essential for success. Essays, examinations, projects (computer and written) and laboratory work are requirements for course completion, in addition to maintaining an organized binder.

Estimated Homework

Chemistry homework consists of critical reading assignments, mathematical computations, lab data analysis, and data expression in charts and graphs. Estimated homework times will vary based on the background knowledge of each student, but is estimated at ½ hour for each hour of class time.

This Class Is Best For...

Students who have completed Biology and are looking to gain insight into the nature of matter and energy, and the changes that they undergo. Topics will be presented along with practical applications for technology, physics, geology and the sustenance of life itself.

Course Materials

Required Materials

- Modern Chemistry, Holt, 2006
- Suggested Materials include a scientific, non-graphing calculator and a 3-ring binder with organized tabs.