

Canyon Crest Academy: AP Chemistry

Level of Difficulty	Estimated Homework	Prerequisites
<input type="checkbox"/> Moderate <input type="checkbox"/> Difficult <input checked="" type="checkbox"/> Very Difficult	90 minutes per day* *This is a general guideline for planning and scheduling purposes. A student's ability level may affect actual preparation time needed.	Department Recommended A in Biology and Recommended A in Chemistry and Successful completion or concurrent enrollment in Integrated Math 2 or Algebra 2

Students should enroll in Chemistry fall semester and AP Chemistry spring semester in the same school year.

Course Description

This course assumes student have a solid college prep chemistry background by completing a college prep chemistry course. Advanced Placement Chemistry is geared for students who are planning a career in the sciences. The course is extremely rigorous and is taught like a first year college chemistry course. Chemistry involves the study of matter and energy. Many common and current problems of the modern world are related to the course content. The central theme of the course is problem solving within chemistry.

The course will include the following big ideas:

1. The chemical elements are fundamental building materials of matter, all matter can be understood in terms of arrangements of atoms. These atoms retain their identity in chemical reactions.
2. Chemical and physical properties of materials can be explained by structure and the arrangement of atoms, ions, or molecules and the forces between them.
3. Changes in matter involve the rearrangement and/or reorganization of atoms and/or the transfer of electrons.
4. Rates of chemical reactions are determined by details of the molecular collisions.
5. The laws of thermodynamics describe the essential role of energy and explain and predict the direction of changes in matter.
6. Any bond or intermolecular attraction that be formed can be broken. These two processes are in a dynamic competition, sensitive to initial conditions and external perturbations.

The course also includes the following science practices:

1. The student can use representations and models to communicate scientific phenomena and solve scientific problems.
2. The student can use mathematics appropriately.
3. The student can engage in scientific questioning to extend thinking or guide investigations within the context of the AP course.

4. The student can plan and implement data collection strategies in relation to a particular scientific question (data can be collected from many different sources – investigations, scientific observations, the findings of others, historic reconstruction and/or archived data)
5. The student can perform data analysis and evaluation of evidence.
6. The student can work with scientific explanation and theories.
7. The student is able to content and relate knowledge across various scales, concepts and representation in and across domains.

Students will explore these topics through discussions, laboratory investigations, teacher demonstrations, and in-class assignments. This course aligns with the guidelines described by CollegeBoard.

Grading

The grading system is based on weighted percentages. Each assignment will have a point value and be weighed according to the category it falls under. Individual teachers may make slight modifications on the weighted percentages.

Category	Weight
Homework	10%
Laboratory	25%
Quiz	15%
Exam	30%
Midterm/Final	20%

Links

CCA Science Homepage <http://teachers.sduhsd.net/ccscience>

CollegeBoard <http://www.collegeboard.com>

CollegeBoard Description <https://secure-media.collegeboard.org/digitalServices/pdf/ap/ap-chemistry-course-and-exam-description.pdf>

Supplemental Information

10 credits

Meets graduation requirement for physical science

Meets UC/CSU subject “d” requirements