

AP Chemistry

Overview

AP Chemistry is a rigorous, college-level course specifically intended for students who plan higher studies in science, engineering, or medicine. With a mentor, students will explore a range of topics to develop their overall scientific understanding. Topics studied include atoms and forces, kinetics, equilibrium, thermodynamics, quantum mechanics and periodicity, electrochemistry and gaseous behavior. The subject matter in this course is presented with an emphasis on both chemical calculations and the conceptual foundation of chemical principles, requiring students to possess a strong mathematics background. While studying specific topics, the program incorporates sophisticated material from college level textbooks and journals in order to enhance student's data analysis skills and improve critical thinking about certain aspects of the scientific method. Lastly, the student will work with their mentor to develop their report writing technique.

Objectives

- Understand that chemical elements are fundamental building materials of matter
- Appreciate and understand that chemical and physical properties of materials can be explained by the structure and the arrangement of atoms, ions, or molecules and the forces between them
- Develop knowledge of and apply the laws of thermodynamics
- Foster scientific habits of mind and body, including objectivity, curiosity, and inventiveness

Structure

- Reflect on current knowledge of the range of subjects that Chemistry teaches and identify strengths and weaknesses
 - Develop a personalised curriculum
- Investigating Chemistry-related studies and theories in the world today
 - Real-world examples
 - Develop problem solving skills and mathematical reasoning.
 - Ethical concerns
 - Limitations of scientific endeavours
- To understand the connections chemistry has to society, culture, technology and other sciences.
- Collaboratively develop data analysis skills
 - Question reliability and validity of data
- Practice reporting primary and secondary data in the form of a report
 - Scientific writing style
- Exam practice
 - Past papers
 - Planning and structuring responses
 - Time management
 - Analysing and evaluating sources