

Who Should take AP Chemistry?

Students who have completed 1 year of chemistry (preferably Honors) with an B average or better.

Students pursuing a career in science or engineering: Forensic science, biomedical engineering, pharmacy, nursing, patent law, molecular biology, genomics, proteomics, biotechnology, bioinformatics and of course chemistry, biochemistry and chemical engineering.

Students planning Pre-Med, Pre-Law, Pre-Vet, Pre-Dent, Pre-Pharm, or any pre-professional program of study. (FYI—chemistry majors are accepted into pre-professional schools with 3x the frequency of biology majors!)

HOW TO SUCCEED IN AP CHEMISTRY:

Learn the difference between memorizing and understanding.

Focus on the how and the why, not on the what.

Ask questions frequently, politely and with an earnest desire to learn the answer.

Ask your teacher for help during class and after school if needed.

Actually read the textbook.



AP CHEMISTRY



Periodic Table of Elements

PIKE HIGH SCHOOL



AP

Chemistry

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Why take AP Chemistry?

1. AP Chemistry will challenge you to the limits of your academic ability.
2. AP Chemistry will teach you to think at higher levels. You will be forced to think and apply concepts to new situations, and even derive your own theories from application. This is excellent preparation for the higher levels of thinking required in college.
3. Of course, one of the most obvious benefits to this course is that when you take and pass the national AP Chemistry Exam given in May, you could receive college credit for the course when you enroll at many colleges and universities in the United States. This will save you both time and money. [Some students who have passed the AP Exam elect to take first year college chemistry anyway, where they find the material an easy review, and achieve top grades while others around them are frustrated and struggling in a class which is too large and/or the instructor is unavailable for help! I especially recommend this approach for students considering majoring in chemistry or biochemistry.]
4. AP Chemistry looks great on your transcript or on a letter of recommendation. More and more of the best colleges and universities are looking for ways that students have distinguished themselves in high school. Being a "straight A" student no longer carries the weight it once did, and many 4.0 grade average students are finding themselves denied entry at the college of their choice. One of the first things admissions officers ask counselors about a potential candidate for their university is 'did this student take the most challenging courses available?' Taking AP Chemistry is a way of distinguishing yourself in high school.
5. AP Chemistry is an intense course of study where students and the teacher really get to know each other. It is to the student's advantage for the teacher to know them well when they need a letter of recommendation.
6. As difficult as AP Chemistry is, you will find that it will never be as easy to learn Freshman Chemistry as it is now! There are several reasons for this:
 - a. High school classes are generally much smaller than college classes.
 - b. Most college professors don't regard teaching Freshman Chemistry as a priority; many concentrate on their research, and consider teaching to be an interruption and distraction to that end.
 - c. At times Freshman Chemistry is used to "weed out" students. Most colleges prefer not to have large class sizes in their upper division courses. Therefore the grades and difficulty level of the freshman courses are adjusted so that only small numbers of very outstanding students will be able to move on. This can result in a large portion of students in freshman chemistry flunking the course!

COURSE OBJECTIVES:

Students will develop an Enduring Understanding of the 6 Big Ideas of AP Chemistry by mastering the Learning Objectives through Essential Knowledge and Science Practices.

Big Idea #1: Structure of Matter

Big Idea #2: Bonding & Intermolecular Forces

Big Idea #3: Chemical Reactions

Big Idea #4: Kinetics

Big Idea #5: Thermodynamics

Big Idea #6: Chemical Equilibrium

Students will study and take the AP Chemistry Exam in May and receive a score of 3 or better.

Semester 1 Curriculum

Unit 1: Foundational Topics – 18 days

Unit 2: Atomic Structure & Periodicity – 12 days

Unit 3: Bonding – 12 days

Unit 4: Reactions and Solutions – 12 days

Unit 5: Solutions – Independent study over breaks

Unit 6: Gases – 10 days

Unit 7: States of Matter & IMF – 10 days

Unit 8: Thermochemistry – 10 days

Semester 2 Curriculum:

Unit 8: Thermodynamics – 10 days

Unit 9: Kinetics – 12 days

Unit 10: Equilibrium: K_c , K_p , and K_{sp} – 14 days

Unit 11: Equilibrium: K_a , K_b , K_w , and Buffers – 18 days

Unit 12: Electrochemistry – 12 days

Review for AP Exam – 8 days