



# Advanced Placement Chemistry

## COURSE INSTRUCTOR

Instructor	Email	Phone number
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## COURSE DESCRIPTION

During this year-long course, we will be making an in-depth study of one of the two major branches of physical science: Chemistry. AP Chemistry is designed to be the equivalent of the general chemistry course usually taken during the first year of college. This course is structured around the following nine units articulated in the AP Chemistry curriculum framework provided by the [College Board](#). The prerequisite course is Pre-AP Chemistry.

## TEXTBOOK

Brown, LeMay, and Bursten, *Chemistry: The Central Science*, 2009, 14<sup>th</sup> Edition, New Jersey: Prentice Hall. The online version will be available through Canvas.

## COURSE MODULES

Unit	Topics
1	Atomic Structure & Properties
2	Molecular & Ionic Compound Structure & Properties
3	Intermolecular Forces and Properties
4	Chemical Reactions
5	Kinetics
6	Thermodynamics
7	Equilibrium
8	Acids & Bases
9	Applications of Thermodynamics

## LAB MODULES

Students will cultivate their understanding of chemistry through lab investigations as they explore the four Big Ideas: scale, proportion, and quantity; structure and properties of substances; transformations; and energy. There are 16 required laboratory experiments that every student enrolled in AP Chemistry must complete. Six of these will be inquiry-based (\*) where the student must provide, through research, a lab procedure instead of being given one by the teacher.

Unit	Experiment
1	Basic Lab Techniques and Density Determination
1	* Empirical Formula of a Metal Oxide ( <i>Inquiry Lab</i> )
1	* Gravimetric Analysis of a Metal Carbonate ( <i>Inquiry Lab</i> )
1	Finding the concentration of solutions using Spectrophotometry
1	Determining the Molar Mass of a Volatile liquid
3	Determining the Molar Volume of a Gas
3	Liquid Chromatography
3	Synthesis, Isolation, and Purification of an Ester
4	* Determination of Concentration of Vinegar by Titration ( <i>Inquiry Lab</i> )
4	Oxidation – Reduction Titrations
5	Rates of Reaction: Thiosulfate with Hydronium ion
6	Heat of Reaction and Hess's Law
6	* Molecular Weight by Freezing Point Depression ( <i>Inquiry Lab</i> )
8	* Determination of the Solubility Product of an Ionic Compound ( <i>Inquiry Lab</i> )
8	Determination of $K_a$ of a Weak Acid through Titration
8	Standardization of NaOH using KHP as a primary standard
8	* Preparation and Properties of Buffer Solutions ( <i>Inquiry Lab</i> )
9	Electrochemical Cells and Reduction Potentials

*\*This is the planned breakdown of labs, but it is subject to change*

## COURSE ASSIGNMENTS

Your grade consists of summative and formative assessments. The summative assessments are 70% of the final grade and the formative assessments are 30% of the final grade. A typical semester in ap chemistry class looks like this:

Coursework			
Type of assignment	Percentage of Grade	Total Points per semester	Breakdown of points
Summative	70%	500-600 points	<ul style="list-style-type: none"> <li>Four- Five Unit Tests 100 pts each</li> <li>One Project 100 pts</li> </ul>
Formative	30%	80-100 points	<ul style="list-style-type: none"> <li>Ten-Fourteen Formatives 10-20 pts each (2-4 formatives per unit)</li> </ul>
Labwork			
Type of	Percentage	Total Points	Breakdown of points

assignment	of Grade	per semester	
Summative	70%	600-800 points	Formal Lab Reports
Formative	30%	100-200 points	Other Labs

*\*This is the planned breakdown of points, but it is subject to change*

## AP EXAM

The AP Chemistry Exam will test your understanding of the scientific concepts covered in the course units, as well as your ability to design and describe chemical experiments. A scientific or graphing calculator is recommended for use on Section 2 of the exam, and you will be provided with a periodic table and a formula sheet that lists specific and relevant formulas for use on the exam.

Exam Breakdown: Multiple choice-60 questions (1hr 30min) 50% of score & Free Response-7questions (1hr 45 min) 50% of score      Duration: 3hrs and 15min.      Scheduled Date: Fri, May 7, 2021, 8AM

## STUDENT EXPECTATIONS

1. Students are expected to check Canvas and email at least daily.
2. Students are expected to attend course sessions.
3. Students are expected to reach out to instructors when they have questions.

## TECHNOLOGY

1. Students are expected to have working Chromebooks.
2. All communication will come through email and Canvas.
3. Supplemental Resources: APClassroom

## LATE POLICY & MAKE-UP WORK

Students are expected to submit all work on time and meet all provided deadlines. If you are struggling to meet this expectation, please reach out to the course instructor in a timely manner.

## ACADEMIC INTEGRITY

It is essential for students to complete their own work at all times. Cheating means using the work of another person as their own, copying information or answers from another student, plagiarizing, allowing another student to copy work, excessive collaboration on an assignment meant to be done individually, or sharing test/quiz questions/answers with students who have not yet taken the test/quiz. If a student is caught violating these guidelines, he/she will receive disciplinary action according to school policy.

