

# COURSE OVERVIEW

# Science

Course Number: 331

Course Name: Advanced Placement Chemistry

Content ID Code: SC

## Course Description

This AP course offers further investigation into the science of chemistry and offers a more in-depth approach to the concepts learned in Chemistry. Topics include: thermochemistry, redox reactions, kinetics, equilibria, and acids/bases. An emphasis is placed on analytical laboratory experiments and problem solving. In conjunction with Chemistry, this course mirrors the concepts of a typical college level general chemistry course. Students are expected to take the AP exam in May. A grade of B or better is recommended in Chemistry.

Credits:

Course Creation Date:

Local Course #:

## Instructional Time

Minutes:

Periods per Cycle

Cycles:

Clock Hours:

## Methods of Assessment

- |   |  |  |  |
|---|--|--|--|
| <input type="checkbox"/> 3-D Projects               | <input type="checkbox"/> Debates                           | <input type="checkbox"/> Plays                 | <input type="checkbox"/> Simulations                   |
| <input type="checkbox"/> Anecdotal Records          | <input type="checkbox"/> Demonstrations                    | <input checked="" type="checkbox"/> Portfolios | <input type="checkbox"/> Speeches                      |
| <input type="checkbox"/> Benchmarks                 | <input type="checkbox"/> Diary/Journals                    | <input type="checkbox"/> Presentations         | <input type="checkbox"/> Standardized Tests            |
| <input type="checkbox"/> Chapter Tests              | <input type="checkbox"/> Final Tests                       | <input type="checkbox"/> Projects              | <input type="checkbox"/> Student Self Evaluation       |
| <input type="checkbox"/> Checklists                 | <input type="checkbox"/> Group Work                        | <input type="checkbox"/> Publisher Tests       | <input checked="" type="checkbox"/> Teacher Made Tests |
| <input type="checkbox"/> Class Participation        | <input type="checkbox"/> Interviews                        | <input type="checkbox"/> Quizzes               | <input type="checkbox"/> Visuals                       |
| <input type="checkbox"/> Computer Products          | <input checked="" type="checkbox"/> Laboratory Experiences | <input type="checkbox"/> Research Projects     |  |
| <input type="checkbox"/> Conferences                | <input type="checkbox"/> Observations                      | <input type="checkbox"/> Role Play             |  |
| <input type="checkbox"/> Criterion-referenced Tests | <input type="checkbox"/> Performance Tasks                 | <input type="checkbox"/> Rubrics               |  |

## Possible Adaptations

- |   |  |   |  |
|---|--|---|--|
| <input type="checkbox"/> Large Print Books      | <input type="checkbox"/> Hands on Activities | <input type="checkbox"/> Peer Tutors        | <input type="checkbox"/> Independent Study |
| <input type="checkbox"/> Audio Taped Tests      | <input type="checkbox"/> Individual Aide     | <input type="checkbox"/> Word Banks         | <input type="checkbox"/> Contracts         |
| <input type="checkbox"/> Extended Time          | <input type="checkbox"/> Manipulatives       | <input type="checkbox"/> Visual Cues        | <input type="checkbox"/> Mentorships       |
| <input type="checkbox"/> Preferential Seating   | <input type="checkbox"/> Flash Cards         | <input type="checkbox"/> Key Words          | <input type="checkbox"/> Telescoping       |
| <input type="checkbox"/> Advanced Organizers    | <input type="checkbox"/> A Notetaker         | <input type="checkbox"/> Acceleration       |  |
| <input type="checkbox"/> Additional Practice    | <input type="checkbox"/> Wait Time           | <input type="checkbox"/> Tiered Assignments |  |
| <input type="checkbox"/> Alternate Assessments  | <input type="checkbox"/> Computation Aids    | <input type="checkbox"/> Expansions         |  |
| <input type="checkbox"/> Visualize the Auditory | <input type="checkbox"/> Study Guide         | <input type="checkbox"/> Learning Centers   |  |

# COURSE OBJECTIVES

## Advanced Placement Chemistry

Total Objectives: 19

Course Objective #	Course Objective	Month
<b>331-01</b>	<b>The student will</b> The student will be able to identify properties of matter, identify appropriate units of measurement, and perform unit conversions.	
Application		
<b>331-02</b>	The student will be able to identify contributions to the development of the periodic table, write formulas for compounds and name compounds.	
Application		
<b>331-03</b>	The student will be able to write balanced chemical equations and perform stoichiometric calculations with them.	
Comprehension		
<b>331-04</b>	The student will be able to write various types oxidation-reduction reactions as net ionic equations and label the nature of each compound.	
Analysis		
<b>331-05</b>	The student will be able to use principles of enthalpy in several types of calculations.	
Application		
<b>331-06</b>	The student will be able to use principles of quantum theory to write four types of electron configurations.	
Analysis		
<b>331-07</b>	The student will be able to compare and explain the trends on the periodic table.	
Analysis		
<b>331-08</b>	The student will be able to draw the Lewis structure of various compounds indicating the electron pair geometry, molecular geometry, and hybridization.	
Analysis		
<b>331-09</b>	The student will be able to describe the nature of gases and perform calculations using the various gas laws.	
Application		
<b>331-10</b>	The student will be able to label and describe a phase diagram, discuss various types of intermolecular forces, and describe various colligative properties.	
Application		
<b>331-11</b>	The student will be to use experimental data and graphs to determine orders of reaction.	
Analysis		
<b>331-12</b>	The student will be able to describe chemical equilibrium and perform various calculations using ICE charts.	
Application		
<b>331-13</b>	The student will be able to use enthalpy, entropy, and Gibb's free energy to perform various equilibrium calculations.	
Analysis		

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## Advanced Placement Chemistry

Total Objectives: 19

Course Objective #	Course Objective	Month
	<b>The student will</b>	
331-14 Application	The student will use equilibrium information to find the pH of weak acids, weak bases, and salts.	
331-15 Analysis	The student will be able to use acid-base equilibrium to calculate the pH of a solution or any point along a titration curve.	
331-16 Application	The student will be able to use solubility information to find equilibrium between a solution and a precipitate.	
331-17 Application	The student will be able to distinguish between a voltaic and an electrolytic cell and perform calculations utilizing cell potential.	
331-18 Comprehension	The student will be able to describe various forms of nuclear radiation and write nuclear equations.	
331-19 Comprehension	The student will be able to identify, name, and draw the structure of several organic compounds.	