

AP Chemistry Class Overview 2019/20

Welcome to AP Chemistry. This course is designed to present the equivalent of a one-year Freshman College Chemistry Course. It offers the opportunity to earn college credit (determined by AP score) as well as high school credit. Students will gain an in-depth understanding of the fundamentals of chemistry which will include problem solving on a conceptual level as well as mathematical problem solving. A large portion of the course will involve laboratory activities that would be comparable to a college level laboratory experience. This course will also fulfill the college laboratory requirement.

AP chemistry is centered around four big ideas.

BIG IDEA 1: SCALE, PROPORTION, AND QUANTITY (SPQ) Quantities in chemistry are expressed at both the macroscopic and atomic scale. Explanations, predictions, and other forms of argumentation in chemistry require understanding the meaning of these quantities, and the relationship between quantities at the same scale and across scales.

BIG IDEA 2: STRUCTURE AND PROPERTIES (SAP) Properties of substances observable at the macroscopic scale emerge from the structures of atoms and molecules and the interactions between them. Chemical reasoning moves in both directions across these scales. Properties are predicted from known aspects of the structures and interactions at the atomic scale. Observed properties are used to infer aspects of the structures and interactions.

BIG IDEA 3: TRANSFORMATIONS (TRA) At its heart, chemistry is about the rearrangement of matter. Understanding the details of these transformations requires reasoning at many levels as one must quantify what is occurring both macroscopically and at the atomic level during the process. This reasoning can be as simple as monitoring amounts of products made or as complex as visualizing the intermolecular forces among the species in a mixture. The rate of a transformation is also of interest, as particles must move and collide to initiate reaction events.

BIG IDEA 4: ENERGY (ENE) Energy has two important roles in characterizing and controlling chemical systems. The first is accounting for the distribution of energy among the components of a system and the ways that heat exchanges, chemical reactions, and phase transitions redistribute this energy. The second is in considering the enthalpic and entropic driving forces for a chemical process. These are closely related to the dynamic equilibrium present in many chemical systems and the ways in which changes in experimental conditions alter the positions of these equilibria.

Units and AP Exam Information

Units	Exam Weighting
Unit 1: Atomic Structure and Properties	7–9%
Unit 2: Molecular and Ionic Compound Structure and Properties	7–9%
Unit 3: Intermolecular Forces and Properties	18–22%
Unit 4: Chemical Reactions	7–9%
Unit 5: Kinetics	7–9%
Unit 6: Thermodynamics	7–9%
Unit 7: Equilibrium	7–9%
Unit 8: Acids and Bases	11–15%
Unit 9: Applications of Thermodynamics	7–9%

Please see the class website chemmom.weebly.com and click on AP chemistry for a unit overview and a detailed unit guide.

1. **AP EXAM** – You have signed up to take an AP course. The AP Chemistry exam is scheduled for Thursday, May 9, 2019. Generally, a score of three, or higher on the AP exam can translate into college credit. AP course and exam will help prepare you for college. The AP exam is your final exam. There will be quizzes after the AP exam and a final lab report that will count as your final.
2. **Binder** – Organization will be your best friend. You are required to keep an individual binder, or folder, which should be neat, organized and should contain the following:
 - Daily class notes (can be in a notebook)
 - In-class problems and activities
 - Completed homework assignments
 - Graded quizzes and tests
 - Laboratory handoutsKeeping an organized binder/notebook allows you ease of studying for tests, quizzes and exams.
3. **Exams** – Exams will generally correspond to multiple chapters in the textbook. Exams are primarily comprised of questions right from past AP exams. Exams will be administered, and graded, in the AP format.
Having a cell phone not in a closed zipped bag during an exam results in an automatic zero on that test for cheating. You may not have your phone in a pocket.
4. **Quizzes** – Unit quizzes should be treated as a test and are worth 25-40. In addition, there will be short assessments that do not have to be announced and can come in any form. Or You should expect a quiz at least once per week. Having a cell phone not in a closed zipped bag during an exam results in an automatic zero on that test for cheating. You may not have your phone in a pocket.

5. **OWL V2** – The textbook features an online adaptive learning feature called OWL V2. You will be required to complete OWL assignments in class that will count as a homework grade. The assignments will be completed in class and you will have 3 tries for each problem.
6. **Laboratory Work** – You will be required to do lab reports in your lab notebook. Labs are worth a good portion of your grade. Most of the laboratory activities we will be doing have printed directions which will be distributed before the activity. A few labs will be online simulations.

You are expected to start your lab report in your lab notebook, prepare any tables and charts, and/or pre-lab sections of the lab report and be ready to discuss all aspects of the directions prior to work beginning in the lab table.

Pre-lab quizzes will be random and do not have to be announced.

A written summary, or report, of the information gathered will follow each laboratory activity. This lab report shows that you have an understanding of both the scientific method and the principles behind the lab. You will be given a specific procedure to follow for the lab report. This procedure is standard throughout all sciences. The data will be collected in the lab but presented neatly in your lab notebook.

Lab reports will be accepted up to three days late with penalties.

Lab reports will not be accepted after this and receive a grade of zero.

If you are absent on the day a lab is performed, YOU must make an alternate arrangement with me **before or the day you return**. An alternate assignment may be given. Failure to do this will result in a 0 on the lab.

These labs will be tested, in some fashion, on the AP Exam, as well as on course exams. Absences for extreme circumstances should be the only reason for missing a lab.

Absences for multiple labs may result in your removal from the course.

Inappropriate behavior during lab will result in immediate removal from the class for the year.

7. **Homework** – You can expect a homework assignment in addition to your daily class work. homework will be due the next school day, without exception. Homework might include, but is not limited to:
 - a. Reading assignments
 - b. On-Line Video Activities
 - c. Practice problems
 - d. Preparation for tests or quizzes