

AP Chemistry-2020

Curricular Requirement 1: Textbook:

1. Tro, Nivaldo, J. (2017). Chemistry a Molecular Approach (4th edition). Boston, Mass.: Pearson.
The text book will be handed out during the first week of class.
2. There is a solutions manual. Shaginaw, Kathleen Thrush. Chemistry a Molecular Approach Solutions Manual. ISBN-13: 978-0-13-406625-7.
3. Test Prep Book: Students are encouraged to purchase a test preparation book for the AP exam. Use of the book *throughout the year* will help students understand the material and better prepare them for the exam. There is one to go along with our book, ISBN-13: 978-0-13-443116-1, or use a Princeton Review book from this year.

Curricular Requirement 2: Big Ideas

There are six big ideas focused on in AP Chemistry. Big ideas encompass the core scientific principles, theories, and processes governing chemical systems. They are:

Big Idea 1: The chemical elements are fundamental building materials of matter, and all matter can be understood in terms of arrangements of atoms. These atoms retain their identity in chemical reactions.

Big Idea 2: 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.

Big Idea 3: Changes in matter involve the rearrangement and/or reorganization of atoms and/or the transfer of electrons.

Big Idea 4: Rates of chemical reactions are determined by details of the molecular collisions.

Big Idea 5: The laws of thermodynamics describe the essential role of energy and explain and predict the direction of changes in matter.

Big Idea 6: Any bond or intermolecular attraction that can be formed can be broken. These two processes are in a dynamic competition, sensitive to initial conditions and external perturbations.

Units:

We will cover nine units in this class. They are:

Unit Number	Name	Number of Classes	% AP Exam Weight
1	Atomic Structure and Properties	9-10	7-9
2	Molecular and Ionic Compound Structure and Properties	12-13	7-9
3	Intermolecular Forces and Properties	14-15	18-22
4	Chemical Reactions	14-15	7-9
5	Kinetics	13-14	7-9

6	Thermodynamics	10-11	7-9
7	Equilibrium	14-16	7-9
8	Acids and Bases	14-15	11-15
9	Applications of Thermodynamics	10-13	7-9

Homework:

Homework will be given after each class period. The purpose of the homework is to give students practice on the material. I encourage students to form study groups where they can work out the problems with others. Please try to stay current with the assignments. Late work is accepted at a loss of 20% until the test is taken on that unit then late work for that unit will not be accepted. Homework may consist of book problems, online problems, simulations, POGILS, quizzes, reading, and studying.

Quizzes:

Quizzes will be given on a weekly basis. They will be largely based on the homework.

Tests:

Tests will be given after completing each unit. Tests will have both multiple choice and free response questions. The format of the test will be similar to the final AP test, with most of the questions coming directly from previous years AP exams. The purpose of this is to get students accustomed to the level of questions they can expect from the AP exam in May. There is no make up for tests. We will do a practice test before each exam to better prepare for the exam.

Class Grading:

Homework	10%
Labs	10%
Tests/Quizzes	65%
Final	15%

Lab:

Right now, there are 16 inquiry based labs, supported by the College Board. There are also many other labs we can do. The College Board requires three hours of lab time a week. There is a lab fee of \$50.00, please pay the bookkeeper and make sure your receipt shows AP CHEMISTRY, then show me the receipt.

You will need a calculator for this class. One with a solver function will help you during the second semester.