**AP Chemistry 1-2 Course Guide 2018-19**

**St. Vincent de Paul High School**

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**Textbook and other study materials**:

Brown, LeMay and Bursten. Chemistry: The Central Science. 12th edition. Prentice Hall. 2012

Recommended: Dingle, Adrian. AP Chemistry Crash Course. latest edition or

Princeton Review, Latest Edition

## Description

AP Chemistry is designed to be the equivalent of a college introductory chemistry course. As a second-year course in Chemistry it is a good choice for the student who has a particular interest in Chemistry and/or is heading towards a career which requires a strong foundation in Chemistry (e.g. medicine, biochemistry, molecular genetics, engineering, geochemistry). The overall goal of AP Chemistry is the understanding and application of fundamental chemical principles and concepts, with a strong emphasis on the learning of chemistry through laboratory experiences which have a strong quantitative component. The course provides many opportunities for students to improve their skills in making observations of chemical reactions and substances, recording data, calculating and interpreting results based on the quantitative data obtained (applied algebra) and communicating effectively the results of experimental work. All students will be expected to take the AP Chemistry exam in the spring.

**Philosophy**

My primary, and implicit, emphasis in AP Chemistry is to provide a first-year college chemistry experience, especially in terms of the application of chemical concepts to problem-solving and laboratory experiments. During class time chemical concepts are introduced, and practice problems presented, analyzed and solved. Laboratory exercises provide practical applications of the lecture material and practice problems.

My second and more explicit emphasis is on preparing you to perform well on the AP Chemistry exam in May. To that end, we will practice many previous AP Chemistry Exam questions. Unit tests and semester exams are designed to emulate the AP Exam as much as possible in terms of types of questions, format and timing per question.

We will begin the year with a brief review of the material you learned last year in Regular or Honors Chemistry, followed by the “big four” topics of Kinetics, Equilibrium, Thermochemistry and Electrochemistry. During the year we will return to Atomic Structure, the Periodic Table, Bonding, Gases and Intermolecular Forces in a deeper manner than Regular and Honors Chemistry, much of which you will review on your own.

### **Laboratory**

A college-type lab notebook, with carbon pages, is required. You will turn in the carbon (yellow) copies as well as any computer-generated graphs for grading. Keep in mind that your lab notebook may be required by your college in order to demonstrate that your lab experience is equivalent to a first-year college chemistry course. Lab quizzes will be given when appropriate.

Appropriate dress and safe behaviour in lab is required. Covered shoes must be worn in lab along with other provided safety equipment.

Some labs will require more time than is available during a single block period. You will be responsible for completing these labs before or after school, office hours, at lunchtime or during a free period (by appointment), if needed.

# Learning Media

The major learning media will be practice problems, old AP Chemistry questions, labs, demonstrations and lectures.

There will be regular quizzes (written and online) and tests.

**Approximate Assessment** Labs/projects 25%

 Tests & Quizzes 50%

 HW 10%

#####  Final/Practice Test 15%

**MAKE-UP POLICIES**

#### Labs/Activities: On lab days, you must dress appropriately, or “rent” long pants and shoes from me for rubric points. If your lab notebook is not ready, you will lose 20% on your lab grade. If you do not receive the lab instructions due to an absence, download them from my website or email me for a copy so that you can be ready for the lab at the same time as your fellow students. If you miss a lab for an EXCUSED ABSENCE it is your responsibility to arrange with me to make it up within one week. Labs missed because of an UNEXCUSED ABSENCE cannot be made up, and result in 0 points for the lab rubric.

#### Lectures/Demonstrations.

Since lectures and demonstrations are often not provided in the textbook, it is essential that you find a reliable partner with whom you can exchange notes and handouts when one of you has missed class. I will provide notes in several forms – full, shortened and problems only, on my weebly website. I recommend you try different methods of taking notes during the year. You are required to bring some form of the provided notes, at the very least the practice problems.

The experience of practicing problems on the whiteboard as a class is hard to replicate by reading someone else’s notes. Try your utmost to be here every day.

#### Tests: Tests are to be made up at ASAP after you return following an EXCUSED absence, agreed upon by student and teacher. If your absence is considered a “CUT” then you forfeit your right to make up the test (0 score).

#### Cheating

Cheating is unacceptable. At the very least the cheater and the cheatee will each receive an F/zero on the assignment and will be referred to the Dean/AP’s office.

## Tutoring and Other Help

I am available for tutoring during office hours or by appointment. Before school works well.

**Classroom Expectations:** based on mutual respect ( respect each other and their property) I will do so also!

* Come to class prepared (on time, with supplies and a positive attitude)
* Raise your hand if you have a question or comment
* Finish eating, drinking, grooming before entering classroom. Put your electronic devices away.

**Recommendation from former AP Chemistry students: Don’t get behind! Do the recommended practice problems, to make sure you understand and can apply your knowledge. Study for the test!!!**

**Course Requirements – Big Ideas of AP Chemistry**

 **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 their 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.

**The full course syllabus, in the form of the approved AP Chemistry audit, is available on my main weebly page. Note that I will make some changes this year in terms of choice of labs and timing of units.**