



## Grand Haven High School AP Chemistry A/B

**Course Number:** D57

**Grade Level:** 9-12 (But mostly 11-12)

**Credits :** 1.0

**Prerequisite Courses :** None, but Honors Chemistry HIGHLY recommended

### Course Description

(taken from the AP Chemistry Course Description of the College Board)

The AP Chemistry course is designed to be the equivalent of the general chemistry course usually taken during the first college year. For some students, this course enables them to undertake, in their first year, second-year work in the chemistry sequence at their institution or to register in courses in other fields where general chemistry is a prerequisite. For other students, the AP Chemistry course fulfills the laboratory science requirement and frees time for other courses.

AP Chemistry should meet the objectives of a good college general chemistry course. Students in such a course should attain a depth of understanding of fundamentals and a reasonable competence in dealing with chemical problems. The course should contribute to the development of the students' abilities to think clearly and to express their ideas, orally and in writing, with clarity and logic. The college course in general chemistry differs qualitatively from the usual first secondary school course in chemistry with respect to the kind of textbook used, the topics covered, the emphasis on chemical calculations and the mathematical formulation of principles, and the kind of laboratory work done by students. Quantitative differences appear in the number of topics treated, the time spent on the course by students, and the nature and the variety of experiments done in the laboratory.

### Course Objectives

To give the student a deeper understanding of the principles of chemistry and to prepare for the AP Chemistry exam

### Student Expectations

#### Laboratory

The laboratory plays an important role in the teaching of science. All the information contained in the chemistry textbook has its roots in the chemistry laboratory. Many chemists have spent a lifetime

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collecting and interpreting data to formulate the theories that are the backbone of chemistry today. Although you cannot be expected to make new scientific discoveries, there are many other goals in including laboratory work in an introductory chemistry course.

### **Attendance**

Please refer to your student handbook for the Grand Haven High School attendance and tardy policies and procedures. Daily attendance (both physical and mental) is critical to your success in chemistry. Concepts are developed and discussed in class and cannot always be understood by reading the textbook or the notes of another person. You are responsible to know all the material covered in class as well as the reading assignments. Much time is spent in the laboratory and make-up labs are very difficult to arrange. If you are absent, and it is excused, I will allow a reasonable amount of time for you to make up the missed lab, but I will limit the time to not more than five school days after you return.

### **Cheating**

Cheating is basically the act of being dishonest or deceiving someone. It includes but is not limited to copying someone else's lab data or lab report, and giving answers to someone else. Students who are caught cheating will receive a zero for the lab or test in accordance with school policy and will receive a failing grade for the semester for a second offense.

### **Calculators**

There are calculators available in class for you to use. They are non-programmable scientific calculators. You may use these calculators any time when you need them during class.

### **Safety in the Laboratory**

In the laboratory, you will be working with equipment and materials capable of causing injury if they are not handled properly. Accidents happen because of carelessness, haste, and disregard of safety rules and practices. The laboratory can be a safe place to work, however, and accidents can be avoided if you know what risks are present and take steps to reduce them.

Because there are many students in the laboratory at the same time, safety must be the number one priority of everyone in the lab. Safety rules for the laboratory are listed below. The rules will be in effect **AT ALL TIMES**. Before beginning any lab work, read these rules and learn them. When working in the lab, follow them carefully. If you have any questions about these rules, ask me before starting lab work.

### **General Laboratory Precautions**

1. Be prepared to work when you arrive in class. Familiarize yourself with the lab procedures before beginning the lab.
2. Carefully follow all instructions. Perform only assigned activities. Never do anything in the laboratory that is not called for in the lab procedure or by me. No unauthorized experimentation of any kind is allowed.
3. Notify me if you have any medical problems that might be affected by lab work, such as allergies or asthma.
4. Never work in the laboratory without supervision.
5. Never eat or drink in the laboratory.

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6. Keep work areas clean and tidy at all times. Only your lab instruction and or data sheet and a pen or pencil should be in your work area.
7. Wear appropriate clothing for working in the laboratory. Remove jackets, ties, and other loose garments. Roll up or secure long sleeves. Remove jewelry, such as dangling necklaces, chains, and bracelets that might present a hazard in the lab.
8. Tie back or cover long hair, especially in the vicinity of an open flame.
9. Any loose fitting sweaters, or coats should be removed and baggy sleeves should be rolled up to keep them away from open flames.
10. Never wear open-toed shoes or sandals in the laboratory. Store an extra pair of shoes in your locker if you usually wear sandals.
11. Wear goggles and a lab apron at all times during a lab experiment. Practice safe science. Wear your protection. Cover your parts. Remember, safety is no accident!
12. If you wear contact lenses, be aware there are gases and liquids that may be harmful to your eyes. The contact lenses can be very dangerous for your eyes if an accident should occur that would splash something in your face. Consider taking your contact lenses out and wearing your glasses during labs.
13. There is to be no horseplay in the laboratory or classroom at any time.
14. Set up laboratory apparatus as described in the written laboratory procedures or by me. Never use makeshift arrangements.
15. Always use the prescribed instrument, such as tongs, test-tube holder, or forceps, for handling apparatus.
16. Keep all combustible materials away from open flames.
17. Never put your face near the mouth of a container that holds chemicals. Never smell any chemical directly. When testing for odors, use a wafting motion to direct the odors to your nose.
18. Conduct any experiment involving poisonous or toxic gases in the exhaust fume hood.
19. Dispose of solid waste materials in the wastebaskets. Dispose of liquid waste materials in the sinks.
20. Clean all work surfaces at the end of class. Wash your hands thoroughly.
21. Know the location of emergency equipment, such as the first-aid kit, eyewash station, fire extinguisher, shower, and fire blanket and know how to use them.
22. In case of chemical spills, notify me immediately.
23. Report all injuries to me immediately.
24. If you have any open cuts, sores, or wounds, you should cover them before doing any lab.
- 25. Students are not allowed in the chemical storage area at any time.**
- 26. Students are not allowed to remove chemicals or equipment from the room.**
27. Lab reports are due the next class day following the completion of the lab.

### **Handling Chemicals**

1. Read and double-check labels on chemical bottles before removing any chemical from a container. Take only as much as you need.
2. To avoid contamination, do not return unused chemicals to stock bottles.
3. When transferring chemicals from one container to another, hold the containers away from your body.

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4. When handling chemicals, take care not to get any on your skin since some chemicals are more dangerous than others. If you have contact with a chemical, you should rinse the affected area with cold water immediately and contact me.
5. When mixing acid and water, always pour the acid into the water, not water into acid, because the heat of solution will cause the water to boil and the acid to splatter.

### **Handling Glassware**

1. You should carry glass tubes, especially long pieces, in a vertical position to minimize the likelihood of breakage and to avoid stabbing anyone.
2. Do not place hot glassware directly on a table or countertop. Always use the ceramic tile as an insulating pad.
3. Allow plenty of time for hot glass to cool before touching it. Remember: Hot glass looks cool but can cause painful burns. You cannot tell if something is hot by looking at it.
4. Never handle broken glass with your bare hands. Use a brush and dustpan. Place any broken glass items in the "GLASS ONLY" bucket.

### **Heating Substances**

1. Use extreme caution with gas burners. Keep your head and clothing away from the flame.
2. Always turn burners off when not in use.
3. Do not bring any substance into contact with a flame unless instructed to do so.
4. Do not heat empty glassware in a flame. The glassware will usually crack and break.
5. Never heat anything unless instructed to do so. Never leave unattended anything that is being heated or is visibly reacting.
6. When heating a substance in a test tube, make sure that the mouth of the tube is not pointed at you or anyone else. Never look into a container that is being heated.
7. Never heat a closed container.

The management (that would be me) reserves the right to change, add to, or delete any of the above rules at any time. Failure by the student (that would be you) to follow the above rules could lead to loss of credit on a lab to loss of credit for the course.

## **Communication**

Teacher communicates via email and google classroom.

## **Grading Policy**

### **Semester Marking Period Grade**

Tests and Quizzes: 60%

Labs: 25%

Homework and Classwork 15%

### **Semester Final Grade**

Semester Marking Period Grade: 80%

Semester Final Exam: 20%

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### **Grading Scale**

A	93-100	B+	87-89.9	C+	77-79.9	D+	67-69.9
A-	90-92.9	B	83-86.9	C	73-76.9	D	63-66.9
		B-	80-82.9	C-	70-72.9	D-	60-62.9
						F	0-59.9

## **Scope and Sequence**

### **Order of Units**

- 1 – Atomic Structure and Properties (Chapters 1-3, 7-8)
- 2- Molecular and Ionic Compound Structure and Properties (Chapters 8, 9 & 10)
- 3- Intermolecular Forces and Properties (Chapters 8-10)
- 4- Chemical Reactions (Chapters 3-4)
- 5- Kinetics (Chapter 12)
- 6- Thermodynamics (Chapter 6)
- 7- Equilibrium (Chapter 13)
- 8- Acids and Bases (Chapter 14)
- 9- Applications of Thermodynamics (Chapter 17-18)

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