



Honors Chemistry Course Syllabus

Ms. Cindy Byron 2025-26

Course Overview

Chemistry is the study of the composition, structure, properties, and change of matter. It is often called the central science because it bridges other natural sciences.

Essential Questions to Spark Student Inquiry

We will address essential questions in various modalities, including the use of claim, evidence and reasoning (**CERs**) to address the following essential questions:

- What is matter, and how is it classified?
- How do physical and chemical properties help identify substances?
- How do changes in temperature and pressure affect the state of matter?
- What is the structure of the atom?
- How do protons, neutrons, and electrons influence the properties of an atom?
- Why is the periodic table organized the way it is?
- How can the periodic table be used to predict properties and behaviors of elements?
- Why do atoms form bonds?
- How does the type of bonding (ionic, covalent, metallic) affect the properties of a substance?

- How do you determine the type of bond formed between atoms?
- How do you know when a chemical reaction has occurred?
- What are the different types of chemical reactions?
- How are chemical equations used to represent chemical changes?
- Why is balancing chemical equations necessary?
- What happens to energy during chemical reactions?
- How is energy transferred or transformed in chemical systems?
- What's the difference between endothermic and exothermic reactions?
- What are the relationships among pressure, volume, temperature, and number of particles in gases?
- How do gas laws explain the behavior of gases in different conditions?
- What factors affect the solubility of a substance?
- How do you calculate the concentration of a solution?
- Why are some substances soluble in water and others not?
- What makes a substance an acid or a base?
- How are pH and concentration related?
- How do acids and bases react with each other?
- How is nuclear chemistry different from regular chemical reactions? What are the risks and benefits of nuclear energy?

Assessment

Formative

What opportunities will students be given to show the development of their understandings and skills? What are the intermediate products and learning tasks that students will create and engage in?

Students will be expected to complete 20-40 minutes of homework nightly. We will go over the HW daily so that you get **TIMELY** and **ACTIONABLE** feedback, and so you have time to **REVISE** and **REINFORCE** the material. HW includes taking notes on videos, finishing up lab write-ups, reading a book for a project, learning essential chemistry

vocabulary and lots and lots of practice. Chemistry is like learning a foreign language. It requires regular engagement to help students grasp concepts and acquire problem-solving skills that involve reading, graphing, analysis of data, using math to problem-solve and justifying a claim with evidence and an explanation of the science behind the concept. We use Quizziz (copyright) and Quizlets (copyright) to review in each unit.

Summative

What final, culminating product(s) will students present to demonstrate achievement of learning outcomes?

There are **10 units, each with:**

- a lot of formative assessments along with
- group and individual labs,
- a homework graded for accuracy and
- a quiz or test.
- By the time you are given the test, you will have learned material in multiple ways (including hands on in some cases) so that if you are doing your part in keeping up, you should have a decent understanding of the material.
- The nuclear chemistry unit involves reading a book and doing a project.
- **A final exam is worth 20 percent of the grade and is cumulative.**
- There may be other assessments not mentioned above.

Grading

Grades are based on the point system. Your grade is a percentage of the available points that you have earned. For example, if you earned 15 points out of a 20 point assignment, your grade is $15/20 = 75\%$. Tests are usually worth between 70-100 points (depending on the length of time spent on the unit), labs are worth around 20 points, daily

homework is usually written and will be checked on a regular basis. Quizzes are worth around 20 points, homework graded for accuracy is worth 10-20 points and vocab for each unit, 10 points.

Attendance

Per [Board of Education Procedure 3420-P](#): Students who exceed the number of absences to earn course credit must attend attendance recovery within two weeks of their last absence.

Per [Board of Education Procedure 4400-P](#): To receive credit for a course, a student must not have more than five (5) unlawful class absences.

When a student must miss school, a written excuse signed by a parent or guardian must be presented to the student's teacher on the day the student returns after an absence. Absences due to extended illnesses may also require a statement from a health care practitioner.

Additional/Supplemental Information

Expectations of behavior

Respect yourself, each other, each other's property and school property.

Materials

a spiral notebook or 3-ring binder with paper, a pencil, [a scientific calculator](#) (optional, but strongly recommended).

Please know that I am available for help during many 5th periods and some days after school. Please email me at cindy.byron@acsgmail.net.

Notebook organization

Organization is key to success and I expect you to have all your assignments in order in your notebooks.

General daily practice expectations

Please do not leave class without informing me and use the ePass/securepass. You are responsible for putting away all supplies, i.e. and throwing away trash from your table or lab table at the end of each class period. All lab spaces should be cleared and cleaned off, with your chairs pushed in.

Safety Contract

Because we do a lot of hands-on labs and work with chemicals, safe practices are a must. By acknowledging an online contract, you are agreeing to the following:

"As a student, I will:

- *report all accidents to the teacher immediately.*
- *follow all instructions given by the teacher.*
- *not engage in horseplay.*
- *protect eyes with goggles when working in the lab.*
- *carry out good housekeeping practices.*
- *know the location of fire and first aid equipment.*
- *conduct myself in a responsible manner."*

Parents and students, please acknowledge that you have read and agree with the information on behavior around safety practices via a Canvas assignment under today's date.

I look forward to a fun and productive year!

Ms. Byron