

Chemistry

CEDARS Course Code: 03051

Term 3: January 31 - April 12, 2024

(You can get the District Course Code from Synergy - Section ID)

Term 4: April 12 - June 14, 2024

Instructor: Veronica Hagman **School Phone:** (253) 800-6820 **Email:** vhagman@bethelsd.org**Grade Level:** 9, 10, 11, 12**Credit:** Lab Science or Elective 0.5**NCAA Approved****Time Requirements/Absences:**

Students will be required to complete 4.5 hours of class time and 2.5 hours of homework per week for this science class. Students are encouraged to contact the instructor about absences in order to determine how the student will make up any missed assignments. Parents can contact the Main Office to excuse absences.

Course Description:

This course engages and prepares students to: (1) be science-literate citizens; (2) meet Washington State Science Standards (NGSS) in preparation for the state science assessment; (3) pursue additional HS and college courses and careers in the Sciences (Physical, Earth, Life); and (4) use, apply, and continue to develop their mathematical skills in scientific contexts (measurement, number & operation, data analysis, algebra). Throughout the course, students will continue using Science and Engineering Practices and Cross Cutting Concepts to study Chemistry.

<https://www.nextgenscience.org/get-to-know>

- **Course content:** student will demonstrate a basic understanding of the following: (Over a 18 week time period to earn a 1.0 credit and 9 week period of time to earn a .5 credit.)
 1. **Properties of Matter and Compounds, Atomic Structure and the Periodic Table**
 - a. HS-PS1-1: Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.
 - b. HS-PS1-2: Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.
 - c. HS-PS1-4: Develop a model to illustrate that the release or absorption of energy from a chemical reaction system depends upon the changes in total bond energy.
 - d. HS-PS1-7: Use mathematical representations to support the claim that atoms, and therefore mass is conserved during a chemical reaction.
 2. **Chemical Bonding and Reactions**
 - a. HS-PS1-2: Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.
 - b. HS-PS2-6: Communicate scientific and technical information about why the molecular-level structure is important in the functioning of materials.

3. Stoichiometry

- HS-PS1-7: Use mathematical representations to support the claim that atoms, and therefore mass is conserved during a chemical reaction.
- HS-PS1-2: Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.
- HS-PS1-7: Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.
- HS-PS3-3: Design, build, and refine a device that works within given constraints to convert one form of energy into another form of energy.

4. States of Matter, Energy and Chemical Change

- HS-PS1-4: Develop a model to illustrate that the release or absorption of energy from a chemical reaction system depends upon the changes in total bond energy.
- HS-PS2-6: Communicate scientific and technical information about why the molecular-level structure is important in the functioning of materials.
- HS-PS3-1: Create a computational model to calculate the change in energy of one component in a system when the change in energy in the other component(s) and energy flows in and out of the system are known.
- HS-PS3-2: Develop and use models to show that energy at the macroscopic scale can be accounted for as a combination of energy associated with the motion of particles (objects) and energy associated with the relative position of particles (objects).
- HS-PS3-4: Plan and conduct an investigation to provide evidence that the transfer of thermal energy when two components of different temperatures are combined within a closed system results in a more uniform energy distribution among the components in the system (second law of thermodynamics).

Materials (may include but are not limited to)

- District approved curriculum (McGraw Hill Inspire Biology textbook & online resources)
- iPad, writing utensils and science notebook (can be a notebook that is composition-style or spiral-bound)
- Students will use the Canvas website to interact with this course throughout the school year. Students will be given access and instructions on navigating and interacting with Canvas.
- Internet Sites, Lab experiences, Computer based learning models, Reading materials, Videos
- All other materials will be provided by the instructor

Assessments (may include but not limited to)

- Oral/Written expression for mastery understanding of course concepts and demonstration of the application of course concepts.
- It is highly recommended that Formative Assessments (FASS) (includes Daily Work, Class Work, Homework, etc.) be thoroughly completed in a timely manner. Late work can slow the learning progress, but will not affect grades. Work is graded on a standard of knowledge demonstrated by the student.
- Assessments that take place after learning has presumably occurred will be used to determine the overall grade.
- Summative assessments (SASS) can be retaken (one time) to demonstrate proficiency and for a better overall grade. Only the improved grade will appear in the grade book (Synergy).
- New information showing additional learning and growth about any given standard will replace

old information and grades will reflect the most recent learning.

- Performance based evaluations through labs and projects.
- Assessment weights:
 - 80% Summative Assessments (SASS) -- tests, quizzes, & projects
 - 20% Formative Assessments (FASS) -- practice, daily work, classwork, homework, participation/engagement/performance, Lab and group work
- Grades are available on Synergy through the StudentVUE or ParentVUE
- Progress reports will be done monthly by the instructor.

Progress

- Student progress is monitored weekly. Student monthly progress is at the discretion of the certificated teacher based on weekly evaluations and the students' ability to complete the required learning standards for that month.
- If a student fails to make collective progress for all weeks, then monthly progress is unsatisfactory. Student monthly progress is specifically evaluated against progress benchmarks, which are clearly defined in the course for each month.
- In addition to the course schedule, the benchmarks may also come in the form of lesson, unit, assignment and/or assessment completion dates.
- These established progress benchmarks will allow teachers and students to assess the students' educational progress in meeting the course learning standards.
- At a minimum, students must turn in at least one assignment per week to maintain a status of "making monthly progress," but will need to complete all the instructor is asking for each week in order to complete the course on time.

Grading Scale: (Progress reports will be done monthly)

- **A** (92-100%) Student demonstrates exemplary abilities of science knowledge/skills through scores earned on assessments; student shows outstanding mastery of expected skills/learning.
- **A-** (90-91.99%)
- **B+** (87-89.99%)
- **B** (82-86.99%) Student demonstrates approaching exemplary abilities of science knowledge/skills through scores earned on assessments; student shows approaching mastery of expected skills/learning.
- **B-** (80-81.99%)
- **C+** (77-79.99%)
- **C** (72-76.99%) Student demonstrates adequate abilities of science knowledge/skills through scores earned on assessments; student shows adequate mastery of expected skills/learning.
- **C-** (70-71.99%)
- **D+** (67-69.99%)
- **D** (60-69%) Student demonstrates emerging abilities of science knowledge/skills through scores earned on assessments; student shows limited mastery of expected skills/learning.
- **F** (59% or below) Student has not yet demonstrated ability of expected science knowledge/skills through scores earned on assessments; student showed minimal or no evidence of expected skills/learning

Relationships to other Content Areas

- Completion of this course will require the student to integrate the following skills: mathematical, logical, linguistic, social, historical, societal, technological, reading and writing.

Class Expectations

- **Participate in classes** as much as possible. I will be introducing, presenting and reviewing the day's lesson during class. There will also be opportunities for small group or one-on-one assistance to help students be successful. Providing 'face-to-face' instruction gives a sense of community, participation, and two-way feedback.
- **Communicate with the teacher.** Open communication is super important, especially if you have a situation that prevents you from joining class sessions.
- **Complete homework / asynchronous (on your own) assignments.** Each week, you will have learning tasks/activities/homework to complete on your own time. Completing homework supports cognitive rehearsal and incorporation of information into your long-term memory.
- **Do not use cell phones during class.** Devices can be distracting from the tasks important to learning. Always inform your teacher if there is an emergency.
- **Follow directions the first time, the fast way.** We will be able to learn effectively when we can accomplish tasks quickly. There are learning procedures and routines to enable us to know what to do in most situations and it is critical to pay attention to the teacher to gain skills and knowledge.
- **Show Respect.** All students have a right to learn in a safe and equitable classroom. They have the right to ask questions and be heard in classroom discussions. Ideas are discussed in a science community, not the people who present the ideas. **Students will be required to participate & work in small groups and will be assessed on their performance/demonstration of skills and knowledge.**
- **Regular attendance is critical to the learning of this class; plan on being punctual and using class time to remain on-task.** Students are expected to make positive contributions to class discussions and assignments. Many class experiences cannot be re-created on an individual basis. It is the student's responsibility to get assignments or make-up for activities that have been missed due to an absence.
- **Ask questions and/or seek help when needed.** It is the responsibility of the student to keep up to date records including use of a planner and science notebook. Students are encouraged to put forth hard work in class and use all of the opportunities for extra assistance available. **Do your best work; incomplete work will be returned for you to complete.**
- **Demonstrate self-control.** All students are expected to act in a manner that does not detract from the learning of others. Each student is responsible for his/her own behavior. Refer to the District Students Rights and Responsibilities Handbook for further details on behavioral expectations.