

Naperville North High School Principles of Bio/Chem Syllabus 2023/2024



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District Mission	To educate students to be self-directed learners, collaborative workers, complex thinkers, quality producers, and community contributors.
Department Mission	At Naperville North High School, our mission is to provide high-quality, innovative, and engaging science education that fosters deep understanding, critical thinking, and a lifelong passion for scientific inquiry. Grounded in the Next Generation Science Standards (NGSS), our curriculum and teaching approach empower students to develop the knowledge, skills, and attitudes necessary to thrive in a rapidly changing world. We are dedicated to nurturing curiosity, collaboration, and scientific literacy, preparing our students to become informed citizens who can contribute to solving local and global challenges through the application of scientific principles.
Course Description	This course is a study of fundamental chemical concepts based on the Next Generation Science Standards. Students will evaluate evidence from experiments and technology used by scientists to understand the nature of the chemistry. Concepts and skills are reinforced by a strong emphasis on hands-on laboratory experiences and the integration of other branches of science. Constructivist methods of teaching are employed to ensure the best possible comprehension and retention of science concepts. CO-REQ: Algebra 1
Course Textbook & Resources	There is no assigned textbook. All resources provided through Canvas.
Course Standards & Weights	<p>The following standards guide instruction, but are not weighted in the gradebook</p> <p><u>HS-PS1-7</u> Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction</p> <p><u>HS-PS1-1</u> 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.</p> <p><u>HS-PS1-2</u> 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.</p> <p><u>HS-PS1-3</u> Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.</p> <p><u>HS-PS2-6</u> Communicate scientific and technical information about why the molecular-level structure is important in the functioning of designed materials.</p> <p><u>HS-PS3-1</u> Create a computational model to calculate the change in the energy of one component in a system when the change in energy of the other component(s) and energy flows in and out of the system are known</p> <p><u>HS-PS3-2</u> Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as a combination of energy associated with the motions of particles (objects) and energy associated with the relative positions of particles (objects).</p> <p><u>HS-PS3-4</u> Plan and conduct an investigation to provide evidence that the transfer of thermal energy when two components of different temperature are combined within a closed system results in a more uniform energy distribution among the components in the system (second law of thermodynamics).</p> <p><u>HS-PS1-4</u> 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.</p>

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HS-PS1-8 Develop models to illustrate the changes in the composition of the nucleus of the atom and the energy released during the processes of fission, fusion, and radioactive decay.
HS-ESS1-6 Apply scientific reasoning and evidence from ancient Earth materials, meteorites, and other planetary surfaces to construct an account of Earth's formation and early history.
HS-ESS1-1 Develop a model based on evidence to illustrate the life span of the sun and the role of nuclear fusion in the sun's core to release energy in the form of radiation.
HS-ESS1-3 Communicate scientific ideas about the way stars, over their life cycle, produce elements.
HS-PS4-1 Use mathematical representations to support a claim regarding relationships among the frequency, wavelength, and speed of waves traveling in various media.

Units of Study:

Semester 1

- Unit 1: Thermodynamics in Earth's Systems
- Unit 2: Northern Lights- Universe and the Periodic Table
- Unit 4: Chemical Equations, Moles (Begin)

Semester 2

- Unit 4: Chemical Equations, Moles (Finish)
- Unit 5: Thermodynamics
- Unit 6: Water

Grade Calculation Definitions

Students will be provided with multiple and varied opportunities to demonstrate mastery of learning standards. Although varied in content, all courses will include examples of practice and evidence of learning:

- **Evidence of Learning:** Tasks or assessments where feedback is provided to the student and considered evidence of a student's level of proficiency on a given standard or skill. This may include, but is not limited to formative tasks that provide insights on areas for growth as well as summative tests, projects and/or performances. In this course, specific examples include: *Unit exams, Quizzes, Lab Assessments*
- **Practice:** Tasks that are connected to course standards and learning targets that promote the development of skills and/or knowledge that will be assessed, but where feedback is not provided. This may include, but is not limited to daily readings, note taking, practice exercises and tasks essential to the learning process. In this course, specific examples include: *Homework, Whiteboard, Class discussion*

Grading Disbursement

Semester grades for all classes (prior to the final exam) will be calculated by a weighted average. As part of the calculation for the overall semester grade, final exams/projects will not exceed 15% of the semester grade.

A = 100-90%, B = 89-80%, C = 79-70%, D = 69-60%, F = 59-0%

Semester Grade:

- Coursework = 85% (Evidence of Learning = 90%, Practice= 10%)
- Final Exam = 15% *Final Exam Format: Multiple Choice Exam*

Coursework (85%):

Homework and Daily work (Practice) 10%
Labs and Quizzes (Evidence) 40%
Unit Exams (Evidence) 50%

Final Exam (15%)



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Grading Practices

Grades communicate each student's progress toward mastery of goals/standards for the course.

- Infinite Campus Symbols/Comments:
 - A score of "Missing" (M) will indicate an assessment has not been turned in and the comments section will include a specific date by which students can still submit. After that date, a zero (0) will be recorded.
 - Any score may also have a comment indicating the due date, turned in, late, reassessment eligibility including the timeline and/or reassessment final scores.
 - A zero indicates that no attempt was made by the student. If a legitimate attempt is made on an assessment and practice work has been completed in a consistent and timely manner (*completing 80% of practice listed in Infinite Campus.*), a score of 50% will be the lowest possible grade.
- Late Work:
 - Evidence of Learning work submitted after the original due date cannot be penalized more than a total of 10% and can be submitted for credit up to 5 days after the original due date.
 - Practice Work is not accepted for credit after the due date.
- Other:
 - No extra credit will be issued.

Academic Integrity Code

District 203 students are challenged to address the academic process enthusiastically, diligently, and most importantly, honestly. It is the responsibility of our students, teachers, and administration to uphold the fundamental academic values of honesty, responsibility, fairness, respect, and trust. The integrity of our district's academic programs is built upon these principles.

Academic integrity violations include cheating; plagiarism, self-plagiarism or copy infringement; obtaining or providing an unfair advantage; falsification of documents; unauthorized access to records; and inappropriate collaboration, whether intentional or unintentional. The classroom teacher and administration will collaborate and exercise professional judgment in determining academic integrity violations.

Reassessment Policy

The purpose of reassessment is to allow students to demonstrate mastery of course standards in which they remain deficient. Higher reassessment grades will replace the original assessment score, but will not exceed 80%.

- Practice work is not eligible for reassessment.
- Lab practicals and lab quizzes are not eligible for reassessment
- Quizzes and Unit Exams with a score below 80% is eligible for reassessment if students have:
 - Demonstrated readiness through timely and consistent completion of practice work. *This means completing 80% of practice listed in Infinite Campus.*
 - Completed designated learning experiences as assigned by the teacher.
- Timeline: Reassessments must be completed 5 school days after the student receives feedback (unless otherwise determined by the instructor).
- Project-Based Assessments that include multiple opportunities for feedback and improvement in the assessment process will represent multiple attempts and be considered a reassessment

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Student Communication

- You are encouraged to communicate with their teacher regarding questions.
- Teachers make every effort to respond to emails and phone calls within 24 hours during the workweek.
- The best way to communicate with teachers is through email; however, if you haven't received a response within 48 hours, please resend the email or call their voicemail. Your email may have been filtered.

Additional Resources for Support

- You can make an appointment with your teacher should you need additional instruction or support in learning material.
- You can attend staff morning science help from 7:10-7:35 am in room 144
- You can attend After School Tutoring in the Learning Commons Wednesday, and Thursday from 3:15-4:15 to receive extra support or to work on assignments.. You can drop in to work with a peer tutor during lunch periods or before school in the Literacy Center.

Parents or Guardians Partnership

Naperville North believes in a collective partnership with parents/guardians which provides students the best opportunities for success.

Some ways parents/guardians can support their student's learning are:

- Actively check Infinite Campus for their student's grades.
 - Infinite Campus is a tool to progress monitor student work until the final course grade is posted.
 - Monthly progress grades are posted and represent the current grade of a student in the course at that moment in time.
- Discuss missing assignments, reiterate due dates, help organize folders, materials, assignment notebooks, and review upcoming projects and assessments.