

Chemistry Syllabus

2023-2024

Contact Information

Mrs. Sirk

Sault Area High School & Career Center

Email: msirk-sas@eupschools.org

1(906)635-3839 Ext. 5814

Room #241

Website: <https://www.saultschools.org/site/Default.aspx?PageID=8471>

What is Chemistry?

Chemistry is the science that deals with the properties, composition, and structure of substances (defined as elements and compounds), the transformations they undergo, and the energy that is released or absorbed during these processes. Every substance, whether naturally occurring or artificially produced, consists of one or more of the hundred-odd species of atoms that have been identified as elements. Although these atoms, in turn, are composed of more elementary particles, they are the basic building blocks of chemical substances; there is no quantity of oxygen, mercury, or gold, for example, smaller than an atom of that substance. Chemistry, therefore, is concerned not with the subatomic domain but with the properties of atoms and the laws governing their combinations and how the knowledge of these properties can be used to achieve specific purposes.

Required Materials:

- Materials required include a notebook, pencil, and a three ring binder.
- A textbook and chromebook will be provided by the district.
- Optional materials include a set of colored pencils for diagram assignments.
 - Each student will be expected to attend class every day with these required materials. The student is expected to bring their chromebook to every class with a fully charged battery.
 - Students will also be expected to arrive to class with their completed/due assignments or assignments we are still working on.
 - No passes will be given for students who do not show up to class with these required materials.

Course Description:

Welcome to the wonderful world of chemistry! A class designed to help students explore the richness and excitement of knowing about and understanding the natural world.

Chemistry is a year-long course where the completion of this course will provide students with equivalent knowledge and skills of problem-solving skills, study skills, and lab skills that will better prepare them to succeed in higher-level, high school science courses. In addition, all Michigan students are presently required to take either chemistry or physics to graduate from high school. Thus, this course fulfills a graduation requirement.

During the semester students will be taught Chemistry content, scientific calculations, complete practice questions and problems, participate in laboratory experiments, analyze data from laboratory experiments, complete projects and do some research. Grading policy is explained in the latter part of this syllabus. Students are expected to turn in required assignments at all times to get a credit for this course.

Outline of Instruction:

During the course of study, we will investigate the following topics and systems:

- Matter & Change
 - Converting SI Units
- Measurements & Calculations
 - Density
 - Conversion Factors
 - Percentage Error
 - Significant Figures
 - Solving Problems Using the Four Step Approach
 - Scientific Notation
- Atoms: The Building Blocks of Matter
 - Subatomic Particles
 - Gram/Mole Conversions
 - Conversions with Avogadro's Number
 - Conversion Factors
- Arrangements of Electrons in Atoms
 - Electron Configurations
 - Weighted Averages and Atomic Mass
- The Periodic Law
 - The Periodic Table and Electron Configurations
 - Atomic Radius
 - Periodic Trends in Ionization Energy
 - Periodic Trends in Electronegativity
 - Writing Electron Configurations
- Chemical Bonding
 - Classifying Bonds
 - Electron Dot Notation
 - Lewis Structures
 - VSEPR Theory and Molecular Geometry
 - Drawing Lewis Structures
- Chemical Formulas and Chemical Compounds
 - Writing Formulas for Ionic Compounds
 - Naming Ionic Compounds
 - Writing Formulas for Molecular Compounds
 - Naming Binary Molecular Compounds
 - Oxidation Numbers
 - Formula Mass
 - Molar Mass
 - Molar Mass as a Conversion Factor
 - Percentage Composition
 - Empirical Formulas
 - Molecular Formulas

- Calculating Percentage Composition
- Chemical Equations and Reactions
 - Writing Word, Formula, and Balanced Chemical Equations
 - Balancing Chemical Equations
 - Activity Series
- Stoichiometry
 - Stoichiometric Calculations Using Mole Ratios
 - Limiting Reactant
 - Percentage Yield
 - Using Mole Ratios

Grading:

Grades will be updated weekly.

Homework/Projects/Labs/Discussions: 20%	A+ (100%+)	A (94-99%)	A- (90-93)
Tests: 50%	B+ (87-89)	B (84-86)	B- (80-83)
Quizzes: 30%	C+ (77-79)	C (74-76)	C- (70-73)
	D+ (67-69)	D (64-66)	D- (60-63)
	E (0-59)		

Learning Outcomes:

Upon completion of this course, the student will demonstrate basic knowledge in the following:

1. Understand and apply the methods of chemistry: scientific thinking, measurements, and using mathematics as a tool for logically solving chemistry problems.
2. Describe the composition and properties of matter as well as the changes that matter undergoes.
3. Examine the relationship between the elements on the periodic table.
4. Describe chemical reactions and interactions and their causes and effects in real - world applications.
5. Apply critical thinking, reasoning, and decision-making skills to solve mathematical and non-mathematical chemistry problems.
6. Appreciate how chemistry affects daily life and society.

Mrs. Sirk's Classroom Rules:

1. **No Disruptive Behaviors** - Please avoid disruptive talking during lectures, assignments, etc. If you have a question, raise your hand. Please do not get up during an active lecture to throw things away, sharpen pencils, ask to use the restroom, ect. I welcome communication and questions and want you to feel comfortable and participate, but we do need to create an effective learning environment for ALL students.
2. **No Food or Drinks** - Do not bring food or beverages into class. Water is permitted with a lid.
3. **Only Use Electronic Devices with Permission** - Keep your cell phones away during the class period. If a cell phone is being used in ANY fashion without my prior permission, I will take it and the student can pick the phone back up after school upon completion of their after school detention with Mrs. Sirk (15 minutes). If the student refuses to turn in their phone, they will be asked to leave the classroom and will not be permitted to return until the issue is resolved with administration.
4. **Earbuds Out of Ears** - It's disrespectful to have your earbuds in your ears when someone is speaking or presenting (even if you're not listening to music). The same protocol will be followed with earbuds as cell phones.
5. **Feet on The Floor** - Please refrain from putting your feet on the tables/desks.
6. **Keep Your Area Clean** - Please do not leave anything (papers, old pencils, etc.) on the floor when you leave.
7. **Remain in Your Assigned Seats** - Stay in your assigned seat during the class period. You are dismissed from your seat only once the bell rings.
8. **Keep Your Table / Desk Orderly** - Make sure you get a textbook from the cart when needed and return it neatly when finished. Please keep your backpacks in your locker per school policy.
9. **Turn in Assignments and Books Neatly** - When books are returned to the shelf, make sure they are stacked neatly upright and in order. Assignments are to be turned in on the front table in a neat stack.
10. **Be On Time** - Tardies will be recorded unless the student comes in with a tardy (pink) pass from another teacher or administration. If you are more than 10 minutes late to class it will result in an absence for that period. If the student has been marked absent and attendance has been submitted before the student has entered the classroom, it is the

students responsibility to speak with Mrs. Sirk directly after that class period to resolve the issue.

11. **If You Miss Class** - If you are absent, check Mrs. Sirk's website. It is your responsibility to make up what you have missed. I will not come to you with your missing work. One day absent allows you one extra day to complete missing work. For example, if you miss Monday, your Monday assignment will be due on Wednesday at the beginning of class. If you miss Thursday and Friday, your Thursday and Friday assignments will be due by Wednesday at the beginning of class. You will be responsible for copying missing notes from another classmate.

12. **Keep Track of Due Dates** - If you miss assignments, fail to complete research papers, forget about test dates, etc. you will struggle to succeed in this class. You are the only one responsible for achieving success. I do not pass or fail you. You do. Please record and keep track of due dates and be responsible for completing tasks on time. Late work is not accepted.

13. **Communicate** - If you have any concerns or worries, please talk with me. If you do not understand the material, ask for assistance. If you are having problems outside of the classroom and it is preventing you from succeeding, please let me know. I am available to help before or after school by appointment.

14. **Smartpass** - Use Smartpass if you need to leave the room. Only one student at a time. No passes are allowed the first 10 minutes of class per school policy.

15. **Cheating** - Cheating of any kind will not be tolerated within the classroom. Cheating or suspected cheating will result in a zero on that assignment or assessment.

Failing to Adhere to Mrs. Sirk's Classroom Rules:

Failing to adhere to Mrs. Sirk's classroom rules will result in the following protocol:

All classroom rules and expectations will be discussed with students at the beginning of the year, so every student is aware of the expectations/consequences that will follow if they fail to adhere to the classroom rules. These expectations/consequences will also have been outlined in a classroom assignment students will have completed along with signatures from each student acknowledging their understanding of the expectations/consequences that will be placed in their student file.

Students will be addressed individually with a concern if Mrs. Sirk feels they have not followed the classroom rules. Students will be treated respectfully as young adults at all times. All discipline within the classroom will be documented within the students classroom file if needed to refer back to at any time.

First Offense: A before or after school detention with Mrs. Sirk.

Second Offense: A parent phone call or meeting with the student & Mrs. Sirk along with an after school detention.

Third Offense: Meeting with administration to determine forward movement in the class. The student will not be allowed to return to class until the meeting has taken place.

Lab Safety in the Classroom:

I like to think that the Chemistry experience is supposed to be fun and humor is an essential part of the classroom environment. However, there is a certain element of "potential danger" with chemicals and sharp instruments used in the lab (please see Lab Safety Contract). Therefore, a NO TOLERANCE policy will be observed for behavior problems or safety issues. Behavior problems will first be discussed individually with each student. Students will be treated respectfully as young adults. First-time offenders may be put on lab clean-up duty before or after school. Continued problems would involve conferences with parents, the student, and administrators, and could result in a possible removal from the class. A safe learning environment will be preserved for all students at all times. Safety contracts will be collected and kept on file before students may conduct labs.

Tips For Success:

- Show Up On Time to Class EVERYDAY. Tardies & absences contribute to lost learning experiences that cannot be recovered just by making up assignments.
- Bring All Necessary Materials to Class EVERYDAY. Be prepared to take an active part in teaching and learning.
- Complete & Turn in Assignments Regularly and on Time on Given Due Dates.
- Study Hard and Work Well With Others. Expect to read a minimum of 45 minutes per night. See HW Rubric!
- Keep Up From the Get-Go; It Is Nearly Impossible to Get Out of a Hole Later On.
- Missed Work or Assessments Due to Absence are the Responsibility of the STUDENT. Make-up times can be arranged before or after school.

STUDY TECHNIQUES:

The most common problem students have is that their study skills are not adequate for high school level classes. Studying for classes involves more than just "cramming the night before a test." Chapter Reviews are provided at the end of each chapter and study resources

are posted on Google Classroom & Mrs. Sirks website for each section studied. The following suggestions are listed to help improve your grade in Anatomy and Physiology and other high school courses.

1. Prepare to participate in class before class begins by reading over your notes you have previously written and also read over the sections of your text that will be covered prior that day's scheduled lecture/activity.
2. Use your vocabulary list consistently as you work through each section.
3. Complete all worksheets, study questions, labs, reading assignments, and activities, etc.
4. Keep your handouts, lecture notes, and study questions organized in your three ring binder.
5. Always read assigned material and outline all the main ideas for each section.
6. Pay attention and actively participate in class.
7. Study frequently and consistently in small doses.
8. Closely study figures, sidebars, and diagrams from lecture and from your text.
9. If you are having trouble with the material, get help early. Do not wait until the day before test day!

I am looking forward to an exciting year! Best of luck and may we learn a lot from each other.

Sincerely, Mrs. Sirk