

Chemistry I Course Outline
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Teacher Beliefs/ Guiding Principles- I believe that it is important that students “feel like scientists”. Content is best taught and retained by student observations and discussions regarding these observations. Learning experiences in science should be obtained through a hands-on and minds-on approach. Skills gained in a science course are just as important as the content. To be successful in future educational endeavors and life in general students must be prepared to work collaboratively; think critically; and communicate results with others.

Course Description:

Chemistry I is a course based on regular laboratory investigations of matter, chemical reactions, and the role of energy in those reactions. Students in Chemistry I compare, contrast, and synthesize useful models of the structure and properties of matter and the mechanisms of its interactions.

This course will be taught using a “modeling” methodology. In our classroom we will be working in groups in which you will conduct experiments and evaluate data in order to evaluate the evidence and concepts that are central to the modern understanding of matter and energy.

Group work products will not be graded themselves. They are used in order for you to create an understanding of chemistry. Group projects will be shared during “board meetings” in which you will present your findings to your classmates. The “board meetings” are important to clarify the classes understanding and to ensure that all students have an understanding of important information.

Course standards are available online.

In this course you will be introduced to the basics of matter and energy. If you believe you will be taking college chemistry courses, in your future, you should take Chem II as well in order to have a complete foundation for the chemistry topics you will be expected to learn in college chemistry.

REQUIRED materials:

Large 3 ring Binder (to store labs and papers)

lined paper and pencils

Safety Contract (to be handed out in class signed by student and parent/gaurdian)

Grading scale: Standard York Institute scale

Your grade will be determined, in each quarter, by the following categories:

Daily Work: 30% Daily work will consist of following group procedures designed to facilitate your understanding of the concepts presented. Participation will be factored into this grade.

Homework: 10%- practice problems, review guides, and weekly reading articles

Unit Tests: 20%

Quizzes: 15%

9 week assessments/final 25%

PLEASE NOTE THE HOMEWORK POLICY! Homework is not a large portion of your grade, but is CRUCIAL to your success!!! Homework will be collected and checked solely for completion. Homework grades are all or nothing –complete or incomplete. You must show enough work to show you made a valid attempt to solve each and every problem. **If you do not show work on a problem the grade for that problem will be zero.**

Increasing your grade: You will be allowed to retake quizzes or worksheets during the time that a unit is in progress. You will be able to redo an assignment/quiz ONLY after school or during a time in class in which all other work has been completed. If you are unable to come after school let me know so that other arrangements can be made. You will be able to retake Unit Tests ONLY after you have completed 45 minutes of remediation **with the teacher. You must retake the test within 5 days of the test having been given to your class.**

Classroom Rules: (follow these to keep your teacher happy and award participation points!!)

1. Bring materials to class. You should bring your 3 ring binder and materials to take notes. Do **NOT** bring food or drink, as part of this room is a working laboratory.

2. If you are going to be/have been absent, it is **your** responsibility to see me about a makeup assignment(s). For tests, homework, and quizzes, you have as many days to turn the assignment as you were absent. **Do to the nature of this course attendance is vital to the successful completion of this course. If you are absent you will need to complete an alternative assignment in order to learn the material missed while you were absent. Typically this will be in the form of text book readings and other activities including the completion of work after school.**

3. Be considerate of others. You should be talking! You should be talking A LOT! However, be respectful of others do not talk when others are presenting their ideas in our board sessions.

4. Follow all instructions, especially in the laboratory. Dress appropriately for lab. (see safety contract)

5. All school rules will be enforced.

Cheating on any test or assignment will result in a zero score.

Cell phones are **not to be on or out at any point during any class time.** Unless I have specifically asked you to take them out and to use them for a learning activity. If your parents need you in case of emergency, they should call the office.

6. Please do not leave the room unless it is absolutely necessary. You **must** have a hall pass. Leaving the room without permission, unless in an emergency situation, will result in a referral.

7. All jokes made by the teacher, no matter how stupid they are, must be tolerated.

8. Please ask questions! Ask them of your group members first; then ask me.

Laboratory Rules: see safety contract **YOU MUST WEAR GLASSES OR GOGGLES IN THE LAB AT ALL TIMES!** Points may be deducted for not following this STATE AND FEDERAL LAW! Not following lab rules or not paying attention to safety precautions will cause you to be excused from the room. You will not be allowed to participate for that day.

You must have a signed lab safety contract on file before you will be allowed to participate in core labs.

Accommodation Options- All IEP's, 504'2, ILP's will be followed per state guidelines. Students with issues that are not easily apparent should meet with me at the first available opportunity to determine options.

Tentative Course Schedule:

Unit Title	Content covered	Assessments
Properties of Matter	Density, accuracy and precision, conservation of mass,	Worksheets 1-5, quiz 1, unit test, homework readings and review guides
Energy and Particles in Motion	Properties of matter, collisions in liquids and gases; kinetic molecular theory and gases; gas laws; kelvin scale	Worksheets 1-3, quiz 1, unit test, homework readings and review guides
Energy and States of matter	Kinetic molecular theory and liquids; conservation of energy; types of energy	Worksheets 1-4, quiz 1 & 2, Unit test, homework readings and review guides
Describing Substances	Substances and mixtures; separation of matter; Avagadro's Hypothesis; Dalton's Model of the atom	Worksheets 1-3, quiz, Unit test, homework readings and review guides
Counting Particles Too Small to See	Avagadro's number; molar mass; chemical formulas	Worksheets 1-3, quiz, Unit test, homework readings and review guides
Particles with Internal Structure	Nomenclature; Thompson's Model; Metals and Nonmetals; ionic and molecular substances	Worksheets 1-6, quiz, Unit test, homework readings and review guides
Chemical Reactions: Particles and Energy	Stoichiometry; balancing equations; types of reactions; endothermic and exothermic reactions	Worksheets 1-3, quiz, Unit test, homework readings and review guides
Stoichiometry	Stoichiometry; percent yield and limiting reactants; particle diagrams	Worksheets 1-4; quiz 1 and 2; Unit test, homework readings and review guides
Further Applications of Stoichiometry	Partial Pressure; STP; Solution concentrations	Worksheets 1-4 Unit test, homework readings and review guides

"Science is a way of thinking more than it is a body of knowledge." - Carl Sagan