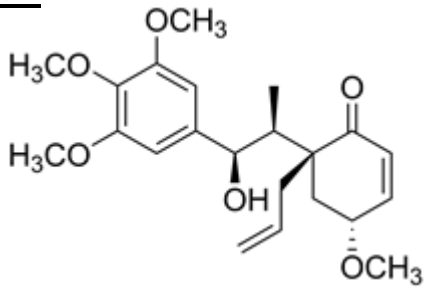
Chemistry Syllabus



Contact Info

Teachers: Mr. Marbach
E-mail: jmarbach@ltps.info
Location: Room #309

Course Description

This first year chemistry course provides the student with a solid foundation in chemistry. The topics covered include the properties of matter, chemical reactions and equations, molar relationships, the gas laws, atomic structure, periodic properties, bonding, solutions, energy, and acids and bases. The laboratory portion of the course emphasizes safety in the chemistry laboratory and experiments that illustrate the concepts covered in the classroom. Students learn how to properly observe and record experimental data, analyze results, and communicate experiment conclusions. Students will use computers to measure and analyze data where applicable.

Meeting Times

Class Meeting	A3, A4, B4
Office Hours	Tu, W, Th - 2:25-2:45pm

Course Expectations & Policies

- Be in your seat and ready to work when the bell rings (Warm-up will be posted or printed out)
- Be a positive, cooperative, and productive learner!
- Be respectful to others!
- Follow all school policies…. zero tolerance for creating unsafe situations during lab!!
- The chemistry classroom is exposed to many toxic and potentially dangerous chemicals… **Absolutely no food or drink is allowed in the classroom, except bottled water in a capped container.**

Required Supplies

- A notebook, something to write with
- Binder or folder for handouts, charts, etc.
- School-issued Chromebook
- POSITIVE ATTITUDE!
- Any other supplies you need to keep yourself organized ☺

Grading System

The following grading scale will be used:

A = 90% - 100% **B** = 80% - 89% **C** = 70% - 79% **D** = 60% - 69% **F** = 59% & below

Grades are based on the following breakdown:

- Tests/Quizzes/Projects - 45% Participation – 15%
- Classwork – 30% Homework – 10%

Evaluation/Assessment:

- **Tests and Quizzes** may include objective questions, essay questions, multiple choice questions and/or problem-solving. Alternate forms of assessment such as projects may be used to determine developmental progress.

- **Homework/Problem Sets** will be assigned for students to practice. These will consist of end-of-section and end-of-chapter questions and other problems assigned by the teacher.

- **Laboratory Activities** are hands- on and when appropriate, should be read and studied before coming to the laboratory in order to understand the purpose and procedures of the exercise. Students must learn and follow all safety rules. Discovery, through inquiry, is woven into all laboratory activities. Laboratory reports must be submitted complete with method/procedure, observations, data/results (in tables or graphs, whichever is necessary), discussion/analysis/interpretation of results, calculations, and conclusions.

- Make up work will be handled on a case-by-case situation.

- Any student who receives a grade less than 65% is granted a chance for a make-up of that assignment **(Does NOT apply to Classwork, Do Now, and Participation grades)** in which the student can earn up to a 75%. If you would like to take advantage of this opportunity, please let me know shortly after the grade is posted – not weeks after the assignment has been graded. ☺

COURSE CONTENT & STRUCTURE

Order of topics is subject to change

Unit
Lab Equipment & Safety
Introduction to Chemistry, Matter, and Energy - Physical/Chemical Properties and Changes - Calculations: Base Units (mass, temp.) v. Derived Units (density) - Elements & Compounds - Mixtures v. Pure substances, Separation Techniques
Chemical Foundations - Elements and Symbols - Formulas of Compounds - Atomic Theory (Dalton, Thomson, Rutherford…) - Atomic Structure (PNE), Isotopes - Introduction to the Periodic Table & Periodic Trends
Modern Atomic Theory - Electromagnetic Radiation - Early Atomic Theory - Wave-Mechanical Model (orbitals, electron configuration)
Bonding & Nomenclature - Ionic and Covalent bonds - Forming Ionic bonds, predicting formulas, and naming - Naming Binary Molecular Compounds
Chemical Reactions - Evidence of Reactions - Balancing Chemical Equations - Classifying Reactions
Measurements & Calculations - Metric System and SI Units - Accuracy v. Precision - Dimensional Analysis
Chemical Composition - Average Atomic Mass - The Mole & Molar Mass - Percent Composition - Empirical v. Molecular Formulas
Chemical Quantities - Mole-Mole Relationships - Mass Calculations - Stoichiometry - Percent Yield
Gases - Pressure & Kinetic Molecular Theory - Gas Laws (Boyles, Charles, Ideal…)
Liquids, Solids, and Solutions - Water and Phase changes - Changes of State and Energy