Chemistry
Course Syllabus

Course Description:
This is a course dealing with the composition of matter, the change matter undergoes, and the theories, laws, and models, which have been developed to explain these changes. It is designed to prepare students for college chemistry. The basic principles of measurement, mathematics and the method of science are employed to carry out controlled inquiries on the concepts of chemistry. These concepts will be developed further through class discussion and problem solving.

Course Units:

Semester 1

- Unit 1 (Ch. 1 & 2)
  - Scientific Method
  - Elements
- Unit 2 (Ch. 3)
  - Scientific Measurement
  - Dimensional Analysis
  - Scientific Notation
  - Significant Figures
  - Density
- Unit 3 (Ch. 4 & 5)
  - Atomic Structure & History
  - Parts of the Atom
  - Electrons Orbitals & Arrangements
- Unit 4 (Ch. 6)
  - Periodic Table
- Unit 5 (Ch. 7, 8 & 9)
  - Ionic and Metallic Bonds
  - Covalent Bonding
  - Molecular Models

Semester 2

- Unit 6 (Ch. 9, 10)
  - Moles, Mass and atoms
- Unit 7 (Ch. 11)
  - Chemical Reactions
- Unit 8 (Ch. 12)
  - Stoichiometry
- Unit 9 (Ch. 13 & 14)
  - States of Matter
  - Kinetic Theory
  - The behavior of gases
- Unit 10 (Ch. 16 & 19)
  - Solutions, Molarity and pH

Labs and Activities

Scientific Methods: Bubble Lab
Scientific Measurement: Density Lab
Mixtures: Chromatography of green and black ink
Atomic Structure: Flame test and Electrons, Energy and Light
Periodic Trends: Alkali Metals and Periodic Table cards/trends
Ionic Bonds: Electrolytes
Covalent Bonds: Models of Covalent Bonds,
Chemical Quantities: Mole conversions and Metal activity

Chemical Reactions: Changes Lab and single replacement lab
Stoichiometry: Baking Soda Lab and Limited Reagents Lab
The Behavior of Gases: Boyles Law and Gas Labs
Kinetic Theory: Ice Cream Lab
Solutions: Kool Aid Lab

Required Materials:

Pencil/Pen
Personal Learning Device (iPad)
3 Prong Folder
Notebook

Grading Policy:

Grades for this class are weighted as follows:

Assessments	50%
Labs / Projects	30%
Assignments / Homework	20%

Grading Scale

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

Late Work Policy in accordance with SB100.

Semester Grade:

90% Semester Course Work
10% Final Exam

Behavior Expectations:

Be on time, on task, and prepared to lean.
Show respect for yourself and others.
Take responsibility for your actions and your education.
Keep All electronics put away (unless otherwise directed)
Keep your work area clean.

Original Work, Cheating, Plagiarism, and Paraphrasing Policy :

Please refer to DPS61 Handbook and Code of Conduct.

Learning Standards:

Grading Policy:
Grades for this class are weighted as follows:

Test & Quizzes	50%
Labs	30%
Classwork	10%
Homework	10%

Grading Scale

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

Original Work, Cheating, Plagiarism, and Paraphrasing Policy :

Please refer to DPS61 Handbook and Code of Conduct

Essential Learning Outcomes:

1st Semester
● Students will 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 patters of chemical properties. (HS-PS1-2)
● 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-PS1-4)

• Students will use the periodic table as a model to predict the relative properties of elements based on patterns of electrons in the outer energy level of atoms. (HS-PS1-1)
• Students will 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. (HS-PS1-3)
2nd Semester
• Students will apply scientific principles and evidence to provide an explanation about the effects of changing the temperature or concentration of the reacting particles on the rate at which a reaction occurs. (HS-PS1-5)
• Students will use mathematical expressions to support the explanation that atoms, and therefore mass, are conserved during a chemical reaction. (HS-PS1-7)
• Students will refine the design of a chemical system by specifying a change in condition s that would produce increased amounts of products at equilibrium. (HS-PS1-6)
• Students will 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-PS1-8)