



## Course Syllabus

Insert School Name Here  
Chemistry I  
2017-18

### **Instructor Information**

Include Name, Phone, Email

### **Course Description:**

Topics covered include atomic structure, nomenclature, reactions, stoichiometry, prediction of products, solutions, acids and bases. While the scope of Chemistry I is similar to Honors Chemistry, more emphasis is placed on the broad themes than on detailed mathematical analysis. Chemistry I is not a prerequisite for Chemistry II and is not a college preparatory course. It is intended for students needing more time to build their mathematical skills.

### **Course Units:**

#### **Semester 1**

##### **August**

Unit 1, Chapters 1 & 2: Elements, Symbols, Composition of Matter, Physical and Chemical Properties, Nature of Science, and Lab Safety

- Chemical Properties Lab

##### **September**

Unit 2, Chapter 3: Scientific Measurement: Dimensional Analysis, Scientific Notation, Significant Figures and Density

- Density Labs

##### **October**

Unit 3, Chapter 4: Atomic Structure: Atomic History, Parts of the Atom- Protons, Electrons and Neutrons. Nucleus, Mass numbers

- Literacy Lesson Writing Assignment

Unit 3, Chapter 5: Electrons in Atoms: Orbitals, Arrangements, Electron configurations.

- Flame Test Lab
- Spectral Lab

##### **November**

Unit 4, Chapter 6: The Periodic Table: Periodic Law, Metals, Nonmetals and metalloids, Families on Periodic Tables, Periodic Trends

- Element Research Project and Presentation

Start Unit 5, Chapter 7/9: Ionic and Metallic Bonds: Ions, Ionic Formulas, Ionic Names,

- Conductivity Labs

### **December**

Finish Unit 5, Chapter 8/9: Covalent Bonding: Molecular Models, Covalent Formulas, Prefixes and Naming.

- Molecular Model Labs

### **Semester 2**

### **January**

Unit 6: Review Nomenclature and scientific measurement. Start Chapter 10: Chemical Quantities: Moles, Mass and Atoms, Avogadro's number.

- Molar Conversion Lab

### **February**

Finish Unit 6: Chemical Quantities: Empirical Formula

- Hydrate Lab

Unit 7, Chapter 11: Chemical Reactions: Types of Chemical Reactions and Solutions

- Chemical Reactions Labs

### **March**

Unit 8, Chapter 12: Stoichiometry: Calculations for quantities of grams, volume and atoms

- Stoichiometry Labs
- Limiting Reactants Lab

### **April**

Unit 9, Chapter 13: States of Matter/Kinetic Theory

- States of Matter/ Phase Diagram Lab

Unit 9, Chapter 14: The behavior of gases

- Boyle's Law Vernier Probe Lab
- Pressure, Volume and Temperature Relationship Lab

### **May**

Unit 10: Solutions, Molarity and pH

- Concentration Lab
- pH Lab

### **Required Materials:**

Example of items to include are: Textbook Title, Novel Title, MacBook, Pen, Pencil, Highlighter, Post It Notes, Ruler, Colored Pencils, Notebook, Folder, etc.

- Prentice Hall Chemistry Textbook (available to check out and take home as needed)
- MacBook with ebook link <http://www.pearsonsuccessnet.com> and log in credentials (from teacher)
- Pencil
- Notebook
- Calculator - scientific

## **Grading Policy:**

Late Work Policy is in accordance with SB100.

### **Grading Scale**

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

Grades for this class are weighted as follows:

Test & Quizzes	60%
Labs	20%
Assignments	20%

## **Learning Standards:**

### **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 patterns of chemical properties. (HS-PS1-2)
- 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 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)

## **Behavior Expectations:**

Please refer to the teacher's Classroom Expectations.

## **Original Work, Cheating, Plagiarism, and Paraphrasing Policy :**

Please refer to DPS61 Handbook and Code of Conduct.

**I have read and understand the attached syllabus and course guidelines for Chemistry I.**

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Student Name (print)

Signature

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Parent/Guardian Signature