



## Course Syllabus

Insert School Name Here  
Honors Chemistry I  
2017-18

### **Instructor Information**

Include Name, Phone, Email

### **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 scientific method are employed to carry out controlled inquiries on the concepts of chemistry. These concepts will be developed further through class discussion and problem solving. This course is a prerequisite for Honors Chemistry II and/or AP Chemistry.

### **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
- Separation of a Mixture Inquiry Lab

##### **September**

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

- Density Labs

##### **October**

Unit 3, Chapter 4: Atomic Structure: Atomic History, Parts of the Atom, Mass numbers, Isotopes and Short-hand Notation.

- 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, Net Ionic Equations.

- Inquiry Conductivity Lab
- Comparative Conductivity Lab

## **December**

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

- 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 Volume, Percent Composition.

- Molar Conversion Lab

### **February**

Finish Unit 6: Chemical Quantities: Empirical Formula and Molecular Formula.

- Separation and Composition of a Hydrate Mixture Lab

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

- Chemical Reactions Labs

### **March**

Unit 8, Chapter 12: Stoichiometry, Limiting Reactants, Percent Yield.

- 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 and Gas Laws

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

### **May**

Unit 10: Solubility, Solutions, Molarity, Dilutions and pH

- Solubility Lab
- Concentration Lab
- pH Lab

## **Required Materials:**

- 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 Honors Chemistry I.**

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Student Name (print)

Signature

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Parent/Guardian Signature