

Information for Course Syllabus

Name of Course: Chemistry II Honors / AP Chemistry

Grade Level: 10-12

School: ORHS

Major Assignments: Small projects that are typically done in groups during class time.

Field Trips: None

How can parents access instructional materials? Canvas

Chemistry II Honors / AP Chemistry

2021-2022

Term 1

Big Idea 1 and 2: Atoms, Physical and Chemical Properties, Bonding

Molecules & Elements

Chemical Analysis

The Mole

Coulomb's Law

Electron Configuration

Periodicity

Atomic Models

Mass Spectrometry

Light and Matter

Solids & Liquids

Gases

Solutions

Intermolecular Forces

Covalent Bonding

Ionic Bonding

Metallic Bonding

Lewis Diagrams & VSEPR Models

Solids

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Term 2

Big Idea 3 and 4: Stoichiometry and Chemical Reactions

Molecular, Ionic, Net Ionic Equations

Stoichiometry

Synthesis, Decomposition Reactions

Neutralization Reactions

Redox Reactions

Chemical Change Evidence

Endothermic & Exothermic Reactions

Electrochemistry

The Rate of Reactions

The Rate Law

The Rate Constant

Elementary Reactions

Activation Energy

The Reaction Path

Multistep Reactions

The Rate-Limiting Step

Reaction Intermediates

Catalysts

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Term 3

Big Idea 5 and 6: Thermodynamics and Acids and Bases

Temperature

Energy Transfer

Conservation of Energy

Energy Changing Processes

Calorimetry

Bond Length & Bond Energy

Enthalpy of Reaction

Intermolecular Potential Energy

Chemical & Physical Processes

Biological & Polymer Systems

Entropy

Spontaneous Processes

Using Gibbs Free Energy

Driving Nonspontaneous Processes

Kinetic Reaction Control

Reversible Reactions

The Reaction Quotient

Equilibrium

The Equilibrium Constant

LeChatelier's Principle

Equilibrium Disturbances

Acid-Base Equilibrium

pH & Buffers

Solubility

Free Energy & the Equilibrium Constant

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Term 4

AP Exam Review

Intro to Organic Chemistry and Biochemistry