Chemistry
1st Semester

CONTENT	DATE

INTRODUCTION/SAFETY — August 6 - 7

- What is Science?
- Course Overview
- Scientific Method
- An Introduction to Chemistry and Metric Measurement
- Report: Metric System

MODERN ATOMIC THEORY AND PERIODIC LAW — August 10-September 11

- Early Atomic Models
- Atoms`, Elements, and Compounds
- Atomic Structure and Nuclear Reactions
- Nuclear Energy
- Nuclear Theory
- Light Spectra and Excited States
- Masters of Classic Atomic Theory
- The Periodic Table
- Trends on the Periodic Table
- The Periodic Law
- Electron Availability: Prelude to Bonding
- Charging Up: Ionization of Atoms
- Electron Configuration

CHEMICAL BONDING AND PROPERTIES OF MATTER — September 14-October 23

- Types of Chemical Bonds
- Determining Chemical Formulas
- Inorganic Nomenclature
- Intermolecular Bonding
- Creating Compounds: Investigating Chemical Changes
- Using Chemical and Physical Properties to Identify Substances
- Experiment: Physical Properties of Elements
- Experiment: Chemical Properties of Some Metals

Chemistry
1st Semester (Cont.)

CONTENT	DATE
LAW OF CONSERVATION OF MATTER AND CHEMICAL REACTIONS	October 26-December 11
• Balancing Equations	
• Demonstrating Conservation of Mass with Balanced Equations	
• Reaction Types (1) Combination and Decomposition	
• Reaction Types (2) Single and Double Displacement	
• Reaction Types (3) Combustion and Neutralization	
• Experiment: Chemical Reactions	
• Evidence for Chemical Change	
• Experiment: Observing Chemical Changes	
• How Big Is a Mole? Avogadro's Number	
• Counting Gas Particles: The Measure of the Mole	
REVIEW AND EXAMS	December 14 - 18

Chemistry
2nd Semester

CONTENT	DATE

LAW OF CONSERVATION OF MATTER AND CHEMICAL REACTIONS — January 4 - 22

- Chemical Accounting: Stoichiometry
- Chemist's Toolbox

MANIPULATING CHEMICAL REACTIONS — January 25-February 19

- Factors that Affect Reaction Rates: Solution Concentration
- Experiment: Effect of Solution Concentration on Reaction Rate
- Factors that Affect Reaction Rate: Temperature, Catalysts, Concentration of Reactants
- Reaction Equilibria and Equilibrium Constants
- Activity: Exploring Factors that Affect Equilibrium
- Conditions Affecting Equilibrium
- Chemical Reactions, Rates, and Equilibrium

THERMOCHEMISTRY AND STATES OF MATTER — February 22-March 26

- Enthalpy of Reaction
- Chemical Reactions, Rates, and Equilibrium
- Phase Changes (1ST SEM)
- Experiment: Observation of a Phase Change
- Gases and Moles
- Gases and Kinetic Molecular Theory
- The Relationship Between Pressure and Volume in Gases (Boyle's Law)
- The Relationship Between Temperature and Volume in Gases (Charles's Law)
- Project: Charles's Law
- Combined Gas Law
- Ideal Gas Law

PROPERTIES OF SOLUTIONS — April 5 – May 7

- Solutions
- The Dissolving Process
- Solubility Equilibrium
- Experiment: Solubility Trends
- Solution Concentration: Molarity
- Solubility
- The Solubility Constant
- Acid-Base Equilibria
- Experiment: Acid Strength
- pH Scale
- Neutralization
- Titration of Acids and Bases

Chemistry
2nd Semester (Cont.)

CONTENT	DATE
SPECIAL PROJECTS/REMEDIATION	May 10 - 21
FINAL EXAMS	May 24 - 28