

LA SALLE GREEN HILLS  
High School Department

**1<sup>st</sup> TRIMESTER COURSE OUTLINE**  
**SCIENCE 3 – CHEMISTRY (HONORS)**  
**SY 2010-2011**

**I. SCOPE AND SEQUENCE**

- A. Introduction
  - 1. Science, Technology and Society
  - 2. Chemistry and Its Branches
  - 3. Historical Development of Chemistry
  - 4. Scientific Method and Attitudes
  - 5. Systems of Measurement
  - 6. Accuracy and Precision
  - 7. Scientific Notation
  - 8. Significant Figures
  - 9. Conversion of Units
  - 10. Graphing
- B. Matter and Energy
  - 1. Matter and Its States
  - 2. Physical and Chemical properties
  - 3. Changes in Matter
  - 4. Classification of Matter
  - 5. Methods of Separating Components of Mixtures
  - 6. Energy and Forms of Energy
  - 7. Law of Conservation of Energy
- C. Atomic Structures
  - 1. Dalton's Atomic Theory and Law of Chemical Combination
  - 2. Discovery of the Electron
  - 3. Radioactivity
  - 4. Discovery of the Nucleus
  - 5. Atomic Number and Mass Number
  - 6. Isotopes and Ions
  - 7. Atomic Mass
- D. Electron Configuration
  - 1. Bohr's Planetary Model of the Atom
  - 2. De Broglie's Description of Electron Behavior
  - 3. The Quantum Mechanical Model of the Atom
  - 4. Quantum Numbers
  - 5. Atomic Orbital Shapes
  - 6. The Aufbau Principle
  - 8. Valence Shells and Electrons
- E. Nuclear Chemistry
  - 1. LCLE: Radiation In or Out?
  - 2. Natural Radioactivity
  - 3. Half-life
  - 4. Artificial Radioactivity
  - 5. Nuclear Equation
  - 6. Balancing Nuclear Equations
  - 7. Radioactive Wastes
  - 8. Uses of Radioisotopes