Grace Christian School

**CHEMISTRY**

**Syllabus**

**GRADE:** 11 **DATE:** August 2020

**BASIC TEXTS:**

Required Textbook: Lacy, Elizabeth. A., Santopietro, Rachel, ***Chemistry, 4th edition.*** Greenville, SC: BJU Press, 2015.

Required Lab Book: Santopietro, Rachel, ***Chemistry Lab Manual, 4th edition***. Greenville, SC: BJU Press, 2015.

**OVERVIEW:** Chemistry is the study of matter and its properties. Specific topics will include the Scientific Method, the metric system, mathematics pertaining to chemistry, atomic theory, properties and characteristics of substances, the Periodic Table of the Elements, bond theory, chemical reactions and formulas, mole theory, liquids/solids/gases, solutions, thermodynamics, kinetics, equilibria, pH, oxidation-reduction reactions, organic chemistry, and nuclear chemistry. Also gained will be practical experiences with laboratory equipment and procedures.

Required Background: Algebra is required either as a pre-requisite or at least a co-requisite for this course.

**MAJOR TOPICS & SKILLS:**

FIRST QUARTER

1. Chemistry for Life

2. Matter

3. Measuring & Calculating

SECOND QUARTER

1. Atomic Structure

2. Elements

3. Bonds & Molecular Geometry

4. Chemical Reactions

THIRD QUARTER

1. Chemical Calculations

2. Chemical Thermodynamics

3. Chemical Kinetics

4. Gases

5. Solids, Liquids & Solutions

FOURTH QUARTER

1. Acids, Bases & Salts

2. Oxidation & Reduction

3. Chemical Equilibrium

4. Nuclear Chemistry

5. Organic Chemistry & Biochemistry