Where to Reach Us

Contact Us:

(866) 311-9015

www.traviseverett.com

support@traviseverett.com

Message

Welcome to chemistry! I am glad that you are entrusting me to be your teacher as you navigate through the material offered in this course. To help prepare you, I have provided a typical list of topics covered in a general chemistry course. Some of these topics may not appear on the syllabus or course outline you received in your course. That's okay - your school or college may pursue a different depth and breadth of study - but this course is designed to meet the needs of any chemistry student that enrolls. Some lessons and tests are marked "Intermediate" or "Advanced" and this is to indicate that the material covered in that lesson or test is geared more towards an AP, IB, or collegiate level experience. Since no two institutions or instructors are the same, it is always a good idea to double check your syllabus before pursuing lessons in this course to ensure that it is relevant to your needs. I wish you the best of luck and perhaps I'll meet you in a live session to chat.

TRAVIS EVERETT LLC

WE MOLD MINDS FOR CHEMISTRY AND PHYSICS

www.traviseverett.com

Travis Everett

SYLLABUS

Below is the syllabus for the course I've outlined here. So many different textbooks, ebooks, and workbooks are available and used with a chemistry curriculum. It is not likely that very many people from different schools will be using the same book, but I still wanted to choose a source book which can be used as a common source, reference, and place from which selected readings can be found. Next to each topic, I have put in the parentheses the corresponding reading from the free open source book, CK12 Chemistry Second Edition.

Each unit, or module, has an accompanying reading, lesson videos, labs and exercises, and a module test. It is not necessary that you complete all of the module components or attain a certain score on the module test before moving on to the next unit. You can freely skip around from module to module, and you may feel that this will be necessary if the course in which you are enrolled has a slightly different chronological order of topics than what is listed below.

01 Measurement and Conversions (Chapter 2)

- Making Observations
- Measurement Systems
- The SI System of Measurement
- Significant Figures
- Using Algebra in Chemistry
- Scientific Notation
- Evaluating Measurements
- Graphing

02 Matter and Its Properties (Chapters 3, 16:1-3)

- What is Matter?
- Properties and Changes of Matter
- Energy
- Properties of Solids and Liquids
- Heat and Changes of State
- Phase Diagrams (P-T Diagrams)

03 Atomic Structure (Chapters 4-7)

- The Atomic Theory
- Further Understanding of the Atom
- Atomic Structure
- The Nature of Light
- Atoms and Electromagnetic Spectra
- The Bohr Model of the Atom
- The Dual Nature of Light
- Characteristics of Matter
- Quantum Numbers, Orbitals, and Probability Patterns
- Electron Arrangement
- Valence Electrons

04 Periodic Trends (Chapters 8-9)

- Mendeleev's Periodic Table
- Families and Periods of the Periodic Table
- The Modern Periodic Table
- Periodic Trends in Atomic Size
- Periodic Trends in Ionic Size
- Periodic Trends in Ionization Energy
- Periodic Trends in Electronegativity
- Periodic Trends in Electron Affinity

05 Chemical Bonding (Chapters 10-11, 16:2-3)

- Ions and Ion Formation
- Ionic Compounds
- Writing Ionic Formulas
- Naming Ionic Compounds
- The Covalent Bond
- Covalent Formulas and Nomenclature
- Electronic and Molecular Geometry
- The Geometrical Arrangement of Electrons and Molecular Shape (Including expanded octets)
- Ionic, Metallic, and Network Condensed Phases
- Intermolecular Forces of Attraction

06 Reactions (Chapter 13, 17:8, 21:1, and 23:1-2)

- Chemical Reactions and Equations
- Balancing Chemical Equations
- Types of Reactions
- Reactions Between Ions in Solutions
- Introduction to Neutralization Reactions
- Origin of the Term Oxidation
- Oxidation-Reduction

07 The Mole Concept (Chapters 12 and 14)

- Determining Formula and Molar Masses
- The Mole
- Percent Composition
- Empirical and Molecular Formulas
- Introduction to Stoichiometry
- Stoichiometric Calculations
- Limiting Reactant
- Percent Yield

08 Gases (Chapter 15 and 16:4)

- The Three States of Matter
- Gases - Kinetic Molecular Theory
- Gases and Pressure
- Gas Laws
- Universal/Ideal Gas Law (Problems involving pressure, volume, molar mass, temperature, and density)
- Molar Volume (STP and non-STP)
- Stoichiometry Involving Gases (STP and non-STP)
- Vapor Pressure and Boiling

09 Solutions (Chapter 17)

- Properties of Solutions
- Solution Formation
- Measuring Concentration (Molarity, molality, mole fraction, and mass percent)
- Factors Affecting Solubility
- Solubility Graphs
- Colligative Properties
- Separating Mixtures

10 Chemical Kinetics (Chapter 18)

- Rate of Reactions
- Collision Theory
- Potential Energy Diagrams
- Factors That Affect Reaction Rates
- Multi-step Reactions

11 Equilibrium (Chapter 19)

- Introduction to Equilibrium
- Equilibrium Constant
- The Effects of Applying Stress to Reactions at Equilibrium
- Slightly Soluble Salts

12 Acids and Bases (Chapters 20 and 21)

- Properties of Acids and Bases
- Arrhenius Acids and Bases
- The pH Concept
- Strength of Acids and Bases
- Brønsted-Lowry Acids and Bases
- Lewis Acids and Bases
- Neutralization
- Titration
- Buffers

13 Thermochemistry (Chapter 22)

- Energy Change in Reactions
- Enthalpy
- Spontaneous Processes
- Entropy
- Gibbs Free Energy

14 Electrochemistry (Chapter 23)

- Balancing Redox Equations Using the Oxidation Number Method
- Electrolysis
- Galvanic Cells

Check our different programs

KAJABI

Please take a look at our various courses and programs by clicking on the Kajabi link provided.

Welcome

TO TRAVIS EVERETT LLC

TRAVIS EVERETT LLC
WE MOLD MINDS FOR CHEMISTRY AND PHYSICS

Discover

What Our Program Has to Offer!