Online Courses for High School Students
1-888-972-6237

Chemistry (Credit Recovery)

A diagnostic driven credit recovery course is designed to give an expanded opportunity for students who did not succeed the first time in the course.

Students are given the opportunity in each learning unit to demonstrate their knowledge in that area of study. If they demonstrate competency in their unit assessment they will be presented with the following unit. If they do not demonstrate competency then they are required to do the entire unit.

Requirement:
For a student to take a credit recovery course, they must have already taken the class unsuccessfully and have the appropriate seat time.

Semester A

Chemistry A CR introduces students to the science of chemistry beginning with exploring why scientists are interested in studying matter at a submicroscopic level. Students will continue to learn how scientific methods are used to understand the natural world and will continue to develop their skills in this area. Chemistry A CR covers topics in the characteristics of matter, atomic structure, chemical periodicity, chemical bonds and compounds, and chemical formula writing and naming. An algebra background is recommended because of the amount and type of math involved.

Prerequisite: Chemistry (Student must have taken Chemistry unsuccessfully and have the appropriate seat time).
Labs: All labs must be provided and administered by the home district.
Course Length: One Semester
Materials: https://ideal.accelerate-ed.com/materials/233760332/course

Module 1: Chemistry Basics

- Chemistry and Society
- The Scientific Method of Investigation
- Matter and Measurement
- Uncertainty in Measurement
- Dimensional Analysis

Module 2: Basics of Matter

- States of Matter
- Pure Substances
- Mixtures
- Physical and Chemical Properties and Changes

Module 3: The Atom
- Atomic Theory
- Atomic Structure
- Isotopes and Atomic Mass
- Nuclear Chemistry

Module 4: Electronic Structure and Periodicity
- The Periodic Table
- The Atomic Model
- Electron Configuration
- The Nature of Light
- Periodic Trends

Module 5: Ionic Compounds
- Ions
- Ionic Bonding
- Metallic Bonds and Properties
- Binary Ionic Compounds
- Ternary Ionic Compounds

Module 6: Covalent Compounds
- Covalent Bonding
- Molecular Compounds
- Molecular Shape and Polarity
- Forces of Attraction
- Water and Its Properties

Semester B
Chemistry B CR builds on the concepts and skills learned in the first semester as students continue to explore the properties of matter and the changes it undergoes. Chemistry B CR covers topics in chemical reactions and stoichiometry, gases, thermochemistry, kinetics, equilibrium, acids and bases, organic chemistry, and biochemistry. An algebra background is recommended because of the amount and type of math involved.

Module 7: Chemical Reactions
- Balancing Chemical Equations
- Types of Chemical Reactions
- Reactions in Aqueous Solutions
- Solubility
- Oxidation Reduction Reactions
- Electron Transfer in Redox Reactions

Module 8: Chemical Stoichiometry
- Chemical Quantities and the Mole
- Empirical and Molecular Formulas
- Concentrations of Solutions
- Stoichiometric Calculations
- Limiting Reactant and Percent Yield

Module 9: Gases

- Properties of Gases
- The Gas Laws
- The Ideal Gas Law
- Gas Stoichiometry

Module 10: Thermochemistry, Kinetics and Equilibrium

- Energy and Chemical Change
- Calorimetry and Heat Capacity
- Reaction Rates
- Chemical Equilibrium

Module 11: Acids and Bases

- Acids and Bases
- Calculating pH
- Neutralization Reactions
- Acid-Base Titration

Module 12: Organic and Biological Chemistry

- Simple Hydrocarbons
- Branched-Chain Hydrocarbons
- Functional Groups
- Proteins and Carbohydrates
- Lipids and Nucleic Acids