Atomic structure, chemical compounds, chemical equations and reaction stoichiometry, reactions in aqueous solution (including acid/base, redox, and precipitation reactions) gas laws and kinetic-molecular theory, and thermochemistry. Emphasis on engineering applications.

• Unit 1: The Scale of the Atomic World

• Unit 2: The Structure of the Atom

• Unit 3: Nuclei, Ions, and Molecules

• Unit 4: Quantifying Chemicals
Unit 5: Transformations of Matter

- Unit 6: Common Chemical Reactions

- Unit 7: Ideal Gas Behavior

- Unit 8: Thermochemistry