



FIND YOUR VOICE. SPEAK YOUR MIND.

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Chemistry – This Chemistry course strives for a balance between conceptual stories about the properties of molecules and quantitative, calculation-based analysis. Units typically begin with observations about phenomena we experience in everyday life or through experiments. We turn these general ideas into specific analyses and quantitative relationships that we can apply to experimental data.

The year begins by establishing a foundation of measurement and associated calculation skills, because in order to explore the story of atoms and molecules that cannot be examined directly, we must be able to make valid conclusions based on measurements that we *are* able to make directly. From here, we are able to take a more conceptual approach toward atomic structure and learning patterns of the periodic table. As we move toward examining chemical reactions and molecules, we discover The Mole, an invaluable tool which allows us to translate the mass of a substance, which we can measure, into a number of molecules or atoms, which we cannot. This idea allows us to explore quantities involved in chemical reactions (stoichiometry) and properties of gases and solutions. We study tendencies of elements, patterns in how they react to form compounds, the shapes of molecules and resulting properties such as polarity. Finally, we examine specific types and categories of reactions and thermochemistry, the role of energy in reactions.

Topics

- Experimental design
- Dimensional analysis, measurement
- Trends in the periodic table
- Naming compounds
- Chemical vs. physical properties
- The Mole
- Empirical and molecular formulas of Compounds
- Stoichiometry
- Properties of Gases
- Solutions
- Molecular Geometry
- Reaction types
- Thermochemistry