

Chem 225: Introduction to Inorganic Chemistry

Course description: Models and tools for understanding periodicity, structure, bonding and reactivity. In the tutorials examples illustrate concepts and relevant spectroscopy.

Course Goals

Develop the ability to use the Periodic Table of the Elements

Develop an understanding of the different theoretical frameworks for bonding and structure

Develop an understanding of solid state structures, including metal, salts and network covalent structures

Develop an understanding of covalent bonding and molecular structure in the context of MO theory

Develop the ability to draw molecules, including conventions and tools to represent their stereochemistry

Develop the ability to recognize and visualize the shapes and symmetry of molecules

Develop an understanding of the concepts of symmetry as applied to chemistry

Develop an understanding of the concepts of stereoisomerism

Develop an understanding of the basic theory and application of spectroscopy

Develop the ability to relate chemical structure to observable properties

Develop the ability to correlate spectroscopic data to molecular structure

Develop an understanding of coordination chemistry

Develop the understanding of the concepts of redox reactions and apply tabulated half-reactions and their standard reduction potentials

Apply the concepts of state and path functions

Apply the concepts of acidity and basicity to aqueous systems with respect to equilibria

Program Goals

Develop competence in problem solving.

Develop the ability to represent chemical information.

Develop an understanding of the use of models, their premises, advantages and limitations.

Develop the ability to disseminate scientific information orally and in writing.