

Chem 459: Materials Science

Course outline: Introduction to properties of modern materials from a chemical perspective.
Applications of these materials in devices

Course Goals

Develop the ability to apply models of bonding and intermolecular interactions to molecules and materials

Develop an understanding of the relevance of MO theory to materials properties

Develop an understanding of techniques used to characterize materials

Develop an understanding of solid state structure and bonding

Develop an understanding of the origin and application of band structure in materials

Develop an understanding of how electronic and/or magnetic properties of materials lead to devices

Develop the ability to apply qualitatively the concepts of quantum mechanics to chemical bonding and standard chemical systems.

Program Goals

Develop the ability to apply mathematics to chemistry.

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

Develop competence in problem solving.