Materials Chemistry

Chemistry 340

Section: D100

Term: 2010 Fall

Instructor: TBA

Discussion Topics: Introduction to symmetry and its applications in materials science. Crystal structures. Bonding in solid state materials. Physical properties of solid state materials.

3 lecture hours/week; 1 tutorial hour/week; 0 lab hours.

Lectures - Topics

1 - Introduction
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2 - Symmetry, Operations & Crystal Systems

6 - Basic Crystal Structures

6 - Complex Structures, Metal Oxides

6 - Bonding in Solids

6 - X-ray Diffraction & Phase Analysis

9 - Electronic, Ionic & Magnetic Properties

3 - Selected Topics on Structure Property Relations

Grading: 20% Quizzes (2); 30% One Midterm Exam; 50% Final Exam

Required Texts: A. R. West, Basic Solid State Chemistry, 2nd Ed., Wiley, 1999.

Recommended Texts: None

Materials/Supplies: None

Prerequisite/Corequisite: Completion of 60 credit hours in a science or applied science program, including first year chemistry, physics and calculus.

Notes: None

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