



THE OHIO STATE UNIVERSITY
COLLEGE OF ENGINEERING

Electroceramics II: Dielectric, Magnetic, and Optical Ceramics

MATSCEN 5571.72

Credit Hours:

1.50 - 1.50

Course Levels:

Undergraduate (1000-5000 level)

Graduate (5000-8000 level)

Course Components:

Lecture

Course Description:

Dielectric, Magnetic, and Optical Ceramics and their applications in devices. Emphasis on the processing-microstructure-property correlation.

Prerequisites and Co-requisites:

Prereq: 3271, or permission of instructor.

Course Goals / Objectives:

- Students will learn basics of dielectric, optical and magnetic properties of ceramic materials
- Students will learn how processing affect crystal structure, microstructure and properties of functional ceramics.
- Students will learn how point defects influence properties of functional ceramics.

Course Topics:

- Basics of dielectrics
 - Dielectric materials; ferro-, piezo and pyro-electrics
 - Basics of magnetics
 - Magnetic ceramics: ferro- and ferri-magnetics
 - Optical properties and materials
 - Electro-optics, magneto-optics
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Designation:

Elective