



THE OHIO STATE UNIVERSITY
COLLEGE OF ENGINEERING

Practical Scanning Electron Microscopy Laboratory

MATSCEN 6740

Credit Hours:

2.00 - 2.00

Course Levels:

Graduate (5000-8000 level)

Course Components:

Lecture
Lab

Course Description:

Provides basic understanding of scanning electron microscopy characterization methods, understanding of sample preparation & compatibility, various imaging modes, and analytical techniques. This course focuses primarily on the practical operation of a scanning electron microscope, and not on its theoretical background.

Prerequisites and Co-requisites:

Prereq: Grad standing; or permission of instructor.

Course Goals / Objectives:

- Basic SEM operation
 - Sample preparation
 - Electron Beam Alignment; Electron imaging modes and detectors; Image acquisition
 - Energy dispersive spectroscopy; Electron backscatter diffraction
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Course Topics:

- Overview of Scanning Electron Microscopy
 - Introduction to Scanning Electron Microscopy
 - Scanning Electron Microscopy Alignment and Parameters
 - Scanning Electron Microscopy Imaging
 - Scanning Electron Microscopy Energy Dispersive Spectroscopy
 - Scanning Electron Microscopy Electron Backscatter Diffraction
 - Scanning Electron Microscopy Electron Sample Preparation
 - Scheduled paired student practice sessions
 - Scheduled one-hour individual Laboratory Practical Examination
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Designation:

Elective