



THE OHIO STATE UNIVERSITY
COLLEGE OF ENGINEERING

Materials Science and Engineering Lab I

MATSCEN 3331

Credit Hours:

2.00

Course Levels:

Undergraduate (1000-5000 level)

Course Components:

Lecture
Lab

Course Description:

Laboratory experiments related to materials processes and properties. Introduction to experimental techniques used in materials fields. Data analysis, presentation, and technical writing skills.

Prerequisites and Co-requisites:

Prereq: 2331, and enrollment as MatScEn-BS major; or permission of instructor.

Course Goals / Objectives:

- Ability to conduct simple experiments in materials synthesis, processing and process control
 - Ability to conduct simple experiments in materials continuum property measurement
 - Skills in reduction, analysis and presentation of redundant and less accurate data
 - Computer data acquisition, analysis and process control
 - Ability to write, clear, concise, complete and correct technical reports
 - Building students' portfolio of important accomplishments
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Course Topics:

- Materials synthesis and processing.
 - Transport: modes, species, continuity. Solid state, and irreversible thermodynamics.
 - Process control for temperature, atmosphere, and vacuum.
 - LabVIEW instrumentation.
 - Continuum properties and their analysis in time and frequency domain.
 - Data reduction, derivations, error analysis and statistics.
 - Document formatting and processing.
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Designation:

Required