Materials Science and Engineering Laboratory for Welding Engineering Students

MATSCEN 3333

Credit Hours:
2.00

Course Levels:
Undergraduate (1000-5000 level)

Course Components:
Lecture
Lab

Course Description:
Lab experiments related to heat treating, casting, welding, materials characterization, and properties. Introduction to experimental techniques in materials science. Development of technical writing skills.

Prerequisites and Co-requisites:
Prereq: WeldEng 2001 and 2601; and enrollment as WeldEng-BS major; or permission of instructor.

Course Goals / Objectives:
- Develop metallographic preparation skills.
- Introduction to heat treating of steels.
- Introduction to casting and methods for producing phase diagrams.
- Development of techniques for interpreting microstructures.
- Introduction to interpretation of weld fusion and heat-affected zones.
- Development of technical writing skills.
Course Topics:
- Heat treating of steels.
- Metallography.
- Casting.
- Microstructural analysis.
- Weld fusion and heat affected zones.

Designation:
Required