Physical Principles in Welding Processes II

WELDENG 4002

Credit Hours:
4.00

Course Levels:
Undergraduate (1000-5000 level)

Course Components:
Lecture
Lab

Course Description:
Study of the application of physical principles in engineering of non-arc welding processes and equipment.

Prerequisites and Co-requisites:
Prereq: 2001 or 3001, and enrollment in the WeldEng-BS major or MatScEn-BS major; or permission of instructor.

Course Goals / Objectives:
- Understanding of major Resistance Welding processes, weld parameters, equipment, and applications
- Understanding of the fundamentals and theory of Resistance Welding
- Understanding of the fundamentals and theory of Solid-State Welding
- Ability to describe and understand the major Solid-State Welding processes, weld parameters, equipment, and industrial applications
- Understanding of the fundamentals and theory of High Energy Density welding processes
- Ability to describe and understand Laser and Electron Beam welding processes, weld parameters, equipment, and industrial applications
Course Topics:
- Fundamentals of Resistance Welding processes
- Equipment, parameters, and applications for Resistance Welding processes
- Laboratory experiments - Resistance Welding
- Fundamentals of Solid-State Welding processes
- Equipment, parameters, and application of Solid-State Welding processes
- Fundamentals of Laser and Electron Beam Welding processes
- Equipment, parameters, and application of Laser and Electron Beam Welding processes.
- Laboratory experiments - Solid-State Welding
- Laboratory experiments - Laser Welding

Designation:
Required