THE OHIO STATE UNIVERSITY
COLLEGE OF ENGINEERING

Welding of Plastics and Composites

WELDENG 4406

Credit Hours:
3.00

Course Levels:
Undergraduate (1000-5000 level)

Course Components:
Lecture

Course Description:
Theory and practice in welding of plastics and polymeric composites, including theory and analysis of welding processes, part and joint design, and process selection.

Prerequisites and Co-requisites:
Prereq: 4201, and enrollment as a WeldEng-BS major; or permission of instructor.

Course Goals / Objectives:
- Understand structure and properties and plastics and polymeric composites
- Ability to understand theory for general plastic welding steps
- Ability to understand theory for, use simple models of, and design joints for plastic welding processes
- Ability to evaluate application and select welding process

Course Topics:
- Introduction to structure and properties of polymers and polymeric composites.
- Hot plate welding and welding steps.
- Hot gas and extrusion welding.
- Implant resistance and induction welding.
- Ultrasonic welding.
- Vibration and spin (friction) welding.
- Radio frequency and microwave welding.
- Infrared and laser welding.
- Case studies.

Designation:
Elective