THE OHIO STATE UNIVERSITY
COLLEGE OF ENGINEERING

Welding Metallurgy Laboratory II

WELDENG 7612

Credit Hours:
1.00 - 1.00

Course Levels:
Graduate

Course Components:
Lecture
Lab

Course Description:
Offered in conjunction with 7102 - Welding Metallurgy II. The course demonstrates microstructure evolution and weldability principles in stainless steels and nonferrous alloys.

Prerequisites and Co-requisites:
Prereq or concur: 7102, and Grad standing; or permission of instructor.

Course Goals / Objectives:
- Provide the student with hands-on experience with identifying microstructures in stainless steels and nonferrous alloys
- Develop an in-depth understanding of the weldability issues associated with stainless steels and nonferrous alloys
- Use optical metallography techniques to characterize microstructure and develop a concise and well written laboratory report

Course Topics:

- Lab 1 - Microstructure evolution in martensitic and ferritic stainless steels.
- Lab 2 - Solidification behavior of austenitic stainless steel welds
- Lab 3 - Solidification anbd transformation behavior of duplex stainless steel welds
- Lab 4 - Dissimilar weldability: stainless and carbon steels
- Lab 5 - Weldability of stainless steels - cracking susceptibility
- Lab 6 - Welding metallurgy and weldability of Ni-base alloys
- Lab 7 - Welding metallurgy and weldability of Al-base alloys
- Lab 8 - Welding metallurgy and weldability of Ti-base alloys
- Lab 9 - Use of constitution diagrams

Designation:

Elective