THE OHIO STATE UNIVERSITY

COLLEGE OF ENGINEERING

Welding Design

WELDENG 7202

Credit Hours:

3.00 - 3.00

Course Levels: Graduate (5000-8000 level)

Course Components:

Lecture

Course Description:

Fundamentals of design and application of codes and standards for welded structures.

Prerequisites and Co-requisites:

Prereq: Grad standing, or permission of instructor.

Course Goals / Objectives:

- Ability to analyze structures including torsion, bending, pressure vessels, and columns
- Ability to analyze and design joints in welded structures
- Ability to analyze and design welded structures for dynamic and fatigue loading
- Ability to apply industry codes and standards to the design of welded joints in steel structures

Course Topics:

- Essential elements in structural welding.
- Torsion and polar moment of inertia.
- Beam bending, area moment of inertia, and graphical methods for bending analysis.
- Stress, strain, and moment of inertia transformations and Mohr circle.
- Analysis of pressure vessels.
- Buckling of columns.
- Weld sizing and weld requirements for built-up members.
- Design of welded plate girders and AISC codes.
- Design of welded pressure vessels and ASME Boiler and Pressure Vessel Code.
- Design of struttural connections and AWS D1.1 code.
- Design of welded structures for dynamic and fatigue loading.

Designation:

Elective