



THE OHIO STATE UNIVERSITY
COLLEGE OF ENGINEERING

Welding Design

WELDENG 4202

Credit Hours:

3.00

Course Levels:

Undergraduate (1000-5000 level)

Course Components:

Lecture

Course Description:

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

Prerequisites and Co-requisites:

Prereq: 4201, and enrollment as a WeldEng-BS major; 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
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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 structural connections and AWS D1.1 code.
 - Design of welded structures for dynamic and fatigue loading.
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Designation:

Required