THE OHIO STATE UNIVERSITY
COLLEGE OF ENGINEERING

Welding Procedure Development and Qualification

WELDENG 4602

Credit Hours:
3.00

Course Levels:
Undergraduate (1000-5000 level)

Course Components:
Lecture
Lab

Course Description:
This course is an introduction to developing and qualifying weld procedures and personnel to welding codes and standards (e.g., AWS B2.1). Hands on welding is required to qualify welding procedure specifications through weld testing for producing procedure qualification records. Weld inspection and acceptance criteria are also explored on how they affect weld design based on welding codes.

Prerequisites and Co-requisites:
Prereq: 4002, and enrollment in the WeldEng-BS major; or permission of instructor.

Course Goals / Objectives:
- Obtain a working knowledge of standard welding codes
- Understand the welding procedure development & qualification process
- Understanding of essential, non-essential, & supplementary essential variables for welding processes
- Understanding of the requirements for the inspection & testing of weld qualification coupons
- Understand the purpose, intent, & compliance of Welding Procedure Specifications (WPS)
- Understand the purpose, intent, & compliance of Procedure Qualification Records (PQR)
- Understand the purpose, intent, & compliance of Welder Performance Qualification records (WPQ)

Course Topics:

- Welding Codes, Standards, & Specifications
- Welding Related Documentation (WPS, PQR, WPQ)
- Welding Variables (Essential, Supplementary, Non-Essential)
- Welding Procedure Development
- Welding Procedure Qualification
- Testing and Examination
- Qualification Process Walkthrough and Audit
- Qualification Standards Comparison
- Special Topics (Code Ambiguities, Unassigned Materials, Heat Input)
- Special Topics (Other Standards, Repair Welding, Performance Qual.)
- Guest Lecture
- Lab 1: Arc Welding WPS,PQR, & WPQ Testing (6 labs)
- Lab 2: Orbital Arc Welding WPS,PQR, & WPQ Testing

Designation:

Elective