

MINNESOTA WEST COMMUNITY & TECHNICAL COLLEGE

COURSE OUTLINE

DEPT. WELD

COURSE NUMBER: 1350

NUMBER OF CREDITS: 4

Lecture: 1 Lab: 3 OJT: 0

Course Title:

Pipe Welding Processes

Catalog Description:

Pipe Welding Processes provides an introduction to pipe welding processes in accordance with the American Welding Society 1G & 2G standards. Students will learn basic pipe layout and preparation techniques including bevel, quarter mark, cut, fit, and weld basic pipe joints in various positions from hand drawn templates. Cutting techniques will concentrate on manual Oxy-Fuel cutting pipe joints for accurate fit-up. Each pipe joint will be welded and inspected to meet visual inspection criteria. Hands-on welding techniques for Pipe processes using Shielded Metal Arc Welding, Gas Metal Arc Welding and Gas Tungsten Arc Welding of carbon steel pipe in the 1G & 2G position.

Prerequisites or Necessary Entry Skills/Knowledge:

None

FULFILLS MN TRANSFER CURRICULUM AREA(S) (*Leave blank if not applicable*)

- Goal 1: Communication: By meeting the following competencies:
- Goal 2: Critical Thinking: By meeting the following competencies:
- Goal 3: Natural Sciences: By meeting the following competencies:
- Goal 4: Mathematics/Logical Reasoning: By meeting the following competencies:
- Goal 5: History and the Social and Behavioral Sciences: By meeting the following competencies:
- Goal 6: The Humanities and Fine Arts: By meeting the following competencies:
- Goal 7: Human Diversity: By meeting the following competencies:
- Goal 8: Global Perspective: By meeting the following competencies:
- Goal 9: Ethical and Civic Responsibility: By meeting the following competencies:
- Goal 10: People and the Environment: By meeting the following competencies:

Topics to be Covered

The use and selection of personal protective equipment, eye and face protection, and clothing

Weld shop safety

Demonstrate open root pass and hot pass

Demonstrate fill and cover passes

Open root pipe 6010 and 7018 in Shielded Metal Arc Welding

Machine set-up and operation
Weld 1G & 2G Pipe to AWS Weld procedure specifications
Weld symbols for tubular and pipe welding
Pipe fitting, beveling, and grinding

Student Learning Outcomes
Recognize and demonstrate weld shop safety and the use of personal protective equipment.
Demonstrate safe and proper use of GMAW, SMAW, GTAW equipment and components.
Perform a groove weld in 1G & 2G positions.
Evaluate welds for compliance with American Welding Society standards and codes.
Hand cut pipe welding coupons.
Hand bevel pipe welding coupons.
Demonstrate the proper set up and use of oxy-fuel cutting and pipe beveling.
Identify and correctly prepare root nose for welding.
Tack weld and feather grind tack welds for welding pipe.
Weld 6010 1G & 2G open root and hot passes.
Weld 1G & 2G fill and cover passes.
Perform accurate measurement and marking for cutting and beveling.
Identify pipe welding symbols.

Is this course part of a transfer pathway: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
<i>*If yes, please list the competencies below</i>

Revised Date: 3/29/2022