



Course Outcome Summary

Required Program Core Course

WELD 106 – Basic Pipe Welding

Course Information

Division	Applied Science & Engineering Technology
Contact Hours	120
Theory	40
Lab Hours	80
Total Credits	6

Prerequisites **WELD 100 & 102**

Course Description

Basic Pipe Welding includes horizontal (2G), vertical (3G), overhead (4G) plate welding positions as well as horizontal (2G), vertical fixed (5G), and 45° fixed all position (6G) pipe welding on standard pipe diameters and thicknesses. Emphasis is placed on preparation, fit-up, code making organizations, welding standards, destructive testing, and non-destructive testing (NDT) for both plate and pipe.

This course is a required core course for students pursuing an AAS Degree, Advanced Welding Certificate, or Basic Welding Certificate in Welding Technology.

Program Outcomes Addressed by this Course:

Upon successful completion of this course, students should be able to meet the program outcomes listed below:

1. Demonstrate safe welding, fabricating, and thermal cutting practices.
2. Perform cutting and gouging procedures using thermal cutting techniques.
3. Follow procedures to deposit sound welds using Shielded Metal Arc Welding (SMAW), Gas Metal Arc Welding (GMAW), Flux Cored Arc Welding (FCAW), and Gas Tungsten Arc Welding (GTAW) processes.
4. Describe American Welding Society (AWS) Standards as well as industrial standards as they relate to welding.
5. Identify and solve common weldability problems.
6. Demonstrate the proper use and care of common welding and fabricating equipment.
7. Identify weld defects, explain methods to prevent defects, and demonstrate proper defect repair.
8. Read prints and interpret welding symbols.
9. Explain knowledge of basic material and welding metallurgy.
10. Specify proper Personal Protective Equipment (PPE) required for applicable work environments.

Course Outcomes

In order to evidence success in this course, the students will be able to:

1. Demonstrate ability to prepare welding & bend test specimens and perform guided bend tests.
 - a. Applies to program outcome 3, 4, 5, 6, 7 & 10.
2. Demonstrate ability to pass prerequisite bend tests in the 2G, 3G, & 4G positions.
 - a. Applies to program outcome 3, 4, 5, 6, 7 & 10.
3. Demonstrate expertise in welding vertical up and down on pipe specimens in 5G & 6G position.
 - a. Applies to program outcome 3, 4, 5, 6, 7 & 10.
4. Demonstrate ability to pass 5G & 6G vertical up & down guided bend tests according to structural steel codes.
 - a. Applies to program outcome 3, 4, 5, 6, 7 & 10.
5. Practice safe welding, thermal cutting, and grinding habits in a lab environment.
 - a. Applies to program outcome 1 and 10.



MONROE COUNTY
COMMUNITY COLLEGE

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6. Integrate thermal cutting, gouging, and grinding operations as required to complete work.
 - a. Applies to program outcomes 1, 2, 6, 9, & 10.
7. Follow Welding Procedure Specifications (WPS), verbal, and written instructions to complete work.
 - a. Applies to program outcome 1, 2, 3, 4, 6, & 10.
8. Demonstrate the ability to properly set up, operate, and shut down applicable welding and cutting equipment.
 - a. Applies to program outcome 1, 2, 3, 6, & 10.
9. Work productively individually and in collaboration with others.
10. Perform destructive and non-destructive weld evaluations.
 - a. Applies to program outcome 3, 4, 5, 7, 9, & 10.

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