



Course Outcome Summary

Required Program Core Course

WELD 103 – Weldment Evaluation & Testing

Course Information

Division	Applied Science & Engineering Technology
Contact Hours	60
Theory	40
Lab Hours	20
Total Credits	3

Prerequisites **MATH 090, RDG 090 and WELD 100**

Course Description

This course provides an introduction to the various methods used to inspect weldments for reliability using both nondestructive and destructive techniques. Weld quality and procedure requirements of the AWS Structural Welding Code will be introduced. The knowledge and skills required for certification as an AWS welding inspector will be covered in depth. Laboratory experience will be gained in nondestructive test methods (visual, ultrasonic, magnetic particle, radiographic, eddy current, and dye penetrant testing).

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. Evaluate the weldments per the requirements of engineering drawings.
 - a. Applies to program outcome 4, 5, 7, & 8.
2. Utilize gauges and measuring instruments to evaluate weld sizes and joint geometry.
 - a. Applies to program outcome 4, 5, 7, & 8.
3. Perform mechanical tests of welded joints.
 - a. Applies to program outcome 4, 5, 7, & 8.
4. Perform LPI, MPI, RT, and UT for the detection of weld discontinuities.
 - a. Applies to program outcome 4, 5, 7, & 8.
5. Formulate welding procedure specifications from AWS prequalified welding procedures, and the fabrication of a conforming weldment.
 - a. Applies to program outcome 1, 2, 3, 4, 5, 6, 7, 8, & 10.



MONROE COUNTY
COMMUNITY COLLEGE

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6. Conduct appropriate test specimens and records for procedure qualification and welder qualification in accordance with AWS, ASME, and API welding codes.
 - a. Applies to program outcome 4, 5, 7, 8, & 10.
7. Follow Welding Procedure Specifications (WPS), verbal, and written instructions to complete work.
 - a. Applies to program outcome 4, 5, 7, 8, & 10.
8. Work productively individually and in collaboration with others.

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By: Stephen Hasselbach

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By: PC