



Course Information

Division	Applied Science & Engineering Technology
Contact Hours	90
Theory	30
Lab Hours	60
Total Credits	4

Prerequisites RDG 090 and qualifying score on accepted placement test.

Course Description

This course is an in-depth introduction to the technical concepts pertaining to the more common industrial welding and cutting processes. Machine functions and filler metal chemistry will be emphasized as well as code and procedure requirements for a variety of industrial needs. The student will learn welding vocabulary, welding theory, safe handling practices and set-up of all related welding equipment. Students will weld using each process on carbon steel. Welding/Cutting processes covered (including laboratory applications) include: Oxy-Fuel Cutting (OFC), Plasma Arc Cutting (PAC), Shielded Metal Arc Welding (SMAW), Gas Tungsten Arc Welding (GTAW), and Gas Metal Arc Welding (GMAW).

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

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. Practice safe welding and thermal cutting habits in a lab environment.
 - a. Applies to program outcome 1.
2. Follow verbal and written instructions to complete work assignments.
 - a. Applies to program outcome 3.
3. Demonstrate proper use and inspection of personal protection equipment (PPE).
 - a. Applies to program outcome 10.
4. Identify gases relevant to welding/cutting operations.
 - a. Applies to program outcome 1, 3, and 4.
5. Identify weld defects and how to apply corrective actions.
 - a. Applies to program outcome 4, 5, and 7.



MONROE COUNTY
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Course Outcome Summary

Required Program Core Course

WELD100 Introduction to Welding Processes

6. Demonstrate ability to set up and operate GMAW-S, SMAW, and GTAW equipment for making sound welds.
 - a. Applies to program outcome 3.
7. Interpret and apply welds as indicated on a blueprint to a fabricated work piece.
 - a. Applies to program outcome 8.
8. Evaluate common weldability issues and apply corrective actions.
 - a. Applies to program outcome 3, 4, 5, and 6.
9. Evaluate and repair welding and cutting equipment.
 - a. Applies to program outcome 6
10. Integrate thermal cutting and gouging operations as required to complete work.
 - a. Applies to program outcomes 1, 2, and 9.

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By: Stephen Hasselbach

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By: PC