Western Technical College

31442316 Wire Feed Welding 2

Course Outcome Summary

Course Information

Description	The study of welding techniques and applications of the GMAW and FCAW processes using the short circuiting in the vertical and overhead positions on ferrous materials.
Career Cluster	Manufacturing
Instructional Level	Technical Diploma Courses
Total Credits	2
Total Hours	72

Pre/Corequisites

Prerequisite 31442306 Wirefeed Welding 1

Textbooks

No textbook required.

Learner Supplies

Welding sateen jacket, welding work gloves (long leather gauntlet, short leather work gloves), welding helmet, leather cape and sleeves. **Vendor:** To be discussed in class. Required.

Tools: 25' steel tape measure, metal combination square, and scribe. **Vendor:** To be discussed in class. Required.

Six-inch leather steel toed work boots - $75.00-150.00. **Vendor:** To be discussed in class. Required.

Safety glasses with side eye protection that meet Z87 OSHA guidelines. **Vendor:** Campus Shop. Required.

Program Outcomes

1. Demonstrate industry recognized safety practices
2. Interpret welding drawings
3. Produce gas metal arc welds (GMAW)
4. Produce flux core welds
5. Perform thermal cutting

Course Competencies

1. Examine Welding Procedure Specification (WPS) sheet.

Assessment Strategies

1.1. Skill Demonstration in summative assessment

Criteria

You will know you are successful when

1.1. you select correct material based on the WPS.
1.2. you set up correct joint, type, and position of a weld from a WPS.
1.3. you set up welding station to perform weld(s) identified on the the WPS.
1.4. you produce weld(s) according to the WPS.
1.5. you inspect welds to verify accuracy according to the WPS and class welding rubrics.

Learning Objectives

1.a. Identify each of the following information that might be on a WPS: code, welding process, base metal grade, filler metal classification, amperage range, shielding gas composition, and pre-heat and interpass temperatures, etc.
1.b. Identify materials needed to complete a weld based on the form.
1.c. Identify joint and position from the form.
1.d. Identify process from the form.
1.e. Identify consumables from the form.

2. Produce fillet welds in vertical and overhead positions for various joints using wire feed processes.

Assessment Strategies

2.1. Demonstration

Criteria

You will know you are successful when

2.1. you follow PPE and safety precautions.
2.2. You produce fillet welds that meet the minimum weld standard on 3F on joints.
2.3. You produce fillet welds meet the minimum acceptance criteria on 4F on joints.
2.4. you apply the correct transfer method for the weld.
2.5. you perform weld inspection.

Learning Objectives

2.a. Explore hand motion and weld puddle manipulation technique for wire feed welding.
2.b. Identify how work and travel angles influence the shape of the weld.
2.c. Describe how work and travel angles change depending on weld position and joint design.
2.d. Identify the effect of gas flow rate on the weld puddle.
2.e. Adjust gas flow rate for different positions and joint designs.

2.f. Practice a variety of fillet welds using transfer methods.
2.g. Practice multi-pass welds.

3. Produce groove welds in vertical and overhead positions for various joints using wire feed processes.

Assessment Strategies

3.1. Demonstration

Criteria

You will know you are successful when

3.1. you follow PPE and safety precautions.
3.2. you produce welds that meet the minimum acceptance criteria on 3G on joints.
3.3. you produce welds that meet the minimum acceptance criteria on 4G on joints.
3.4. you apply the correct transfer method for the weld.
3.5. you perform weld inspection.

Learning Objectives

3.a. Explore hand motion and weld puddle manipulation technique for wire feed welding.
3.b. Describe how work and travel angles influence the shape of the weld.
3.c. Identify how work and travel angles change depending on weld position and joint design.
3.d. Practice multi-pass welds.
3.e. Practice a variety of groove welds using transfer methods.