



Articulation Agreement Course Provisions and Competencies

WLD 122 Gas Metal Arc Welding I

1-3 credits

Materials of carbon steel and stainless steel with 0.035 solid wire and aluminum with 0.030" solid wires. Various joints and thickness of materials welded in all positions, using different modes and gases.

PROVISIONS

1. Columbia Basin Job Corps instructors may award college Tech Prep credit provided they possess or attain a SMAW welding certification, WABO, AWS, or ASME, in at least one position.
2. Other teachers approved by the college may test and award credit to students or arrange for testing with the BBCC welding instructor.
3. Students must complete a minimum 120 hours of instruction in Gas Metal Arc Welding.
4. Student must complete WLD 111, WLD 112, and WLD 121.
5. Student must receive an A or B grade (minimum 2.9 or better) and complete all competencies.
6. Students may apply credits towards course requirements in the Big Bend Community College Welding Technology Program.
7. College credits earned under this articulation agreement are at no cost to the student.
8. Columbia Basin Job Corps and/or student is responsible for any fees for WABO, ASME. & AWS welding certification testing.
9. All required Tech Prep forms must be sent to BBCC **within 30 days** of high school course completion.
10. Teachers must assign student grades and credits **within 30 days** of high school course completion.

COMPETENCIES

Upon successful completion of competencies in each of the following positions, a student can earn 1 credit for each step. Student will be able to perform the following tasks:

PART 1: Metal Transfer Short Arc

- **Step 1 - Flat, Horizontal & Vertical-Up Positions** **1 credit**
 1. Perform safety inspection of equipment, work area and accessories
 2. Make minor repairs to equipment and accessories.
 3. Set up a Gas Metal Arc Welding station for Short Arc transfer on plain carbon steel
 4. Perform the following tasks

Flat Position Short Arc

1. Make several stringer beads on carbon steel passing visual inspection.
2. Make a pad of welds with 8-12 beads passing visual inspection.
3. Make lap weld on ¼" carbon steel; passing visual inspection, size inspection and break test.
4. Make a 1F single pass ¼" fillet weld passing visual inspection and passing the fillet break test.
5. Make a 1F, ½" multi-pass fillet weld passing visual and size inspection.
6. Weld a 1G plate qualification test with backing; passing visual inspection and bend test.

Horizontal Position Short Arc

1. Make several stringer beads on carbon steel; passing visual inspection.
2. Make a pad of welds with 8-12 beads; passing visual inspection.
3. Make ¼" lap weld on carbon steel; passing visual inspection, size inspection and break test.
4. Make 2F single pass ¼" fillet weld; passing visual inspection and passing the fillet break test.
5. Make 2F ½" multi-pass fillet; passing visual and size inspection.
6. Weld a 3/8" 2G plate qualification test with backing; passing visual inspection and bend test.

Vertical – Up Position Short Arc

1. Make several stringer beads on carbon steel; passing visual inspection
2. Make a pad of welds with 8-12 beads; passing visual inspection.
3. Make ¼" lap weld on carbon steel; passing visual inspection, size inspection and break test.
4. Make a 3F, single pass ¼" fillet weld; passing visual inspection and passing the fillet break test.
5. Make a 3F, ½" multi-pass fillet; passing visual and size inspection.
6. Weld a 3G plate qualification test with backing; passing visual inspection and bend test.

• **Step 2 - Overhead Position**

1 credit

Overhead Position Short Arc

1. Make several stringer beads on carbon steel; passing visual inspection.
2. Make a pad of welds with 8-12 beads; passing visual inspection.
3. Make ¼" lap weld on carbon steel; passing visual inspection, size inspection and break test.
4. Make a 4F single pass ¼" fillet weld; passing visual inspection and passing the fillet break test.
5. Make a 4F six pass ½" multi-pass fillet; passing visual and size inspection.
6. Weld a 3/8" 4G plate qualification test with backing; passing visual inspection and bend test.

PART 2: Metal Transfer Spray Arc

• **Step 3 - Flat & Horizontal Positions**

1 credit

1. Make minor repairs to equipment and accessories.
2. Set up a Gas Metal Arc Welding station for Spray Arc transfer on plain carbon steel

Flat Position Spray Arc

1. Make several stringer beads on carbon steel; passing visual inspection
2. Make a pad of welds with 8-12 beads; passing visual inspection
3. Make ¼" lap weld on carbon steel; passing visual inspection, size inspection and break test
4. Make 1F single pass ¼" fillet weld passing; visual inspection and passing the fillet break test.
5. Make a 1F ½" multi-pass fillet; passing visual and size inspection
6. Weld a 1G plate qualification test with backing; passing visual inspection and bend test.

Horizontal Position Spray Arc

1. Make several stringer beads on carbon steel; passing visual inspection
2. Make a pad of welds with 8-12 beads; passing visual inspection
3. Make ¼" lap weld on carbon steel; passing visual inspection, size inspection and break test
4. Make a 2F single pass ¼" fillet weld; passing visual inspection and passing the fillet break test.
5. Make a 2F ½" multi-pass fillet; passing visual and size inspection
6. Weld a 3/8" 2G plate qualification test with backing; passing visual inspection and bend test.