



## Course Articulation Agreement Procedures and Provisions

### WLD122 - 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.

### STUDENT PROCEDURES

1. Enroll in the required high school class.
2. Register for Tech Prep dual credit at [www.bigbend.edu/techprep](http://www.bigbend.edu/techprep).
3. Register for the Tech Prep dual credit articulated course during the same academic year the high school class is completed. If a series of courses are involved in the articulation, students register for credit during the same academic year the last course in the series is completed. **Students cannot earn "retroactive credit" for courses taken in previous years.**
4. Earn a grade of 'B' (**3.0**) or better in all courses required under the articulation agreement.
5. Complete all required skills as identified on the competency profile.
6. If an exam or review of completed work is required under the terms of this agreement, students must receive a passing score (determined by college or industry certification) to earn college credit.

### TEACHER PROCEDURES

1. Ensure all students receive a copy of the course syllabus outlining information about Tech Prep, the college course competencies, and the process required to earn college credit. See attached "College Tech Prep Notice to Students."
2. Hold students accountable for the same competency standard and course expectations as required by the college-equivalent course (*see competency list attached*).
3. If required for articulation, ensure students are prepared to take industry certification exams, complete a professional portfolio documenting their work, or take a final exam to measure their level of skill and competence in the coursework.
4. Submit final grades for all students registered to earn Tech Prep college credit **within 30 days** of high school course completion.
5. Attend scheduled meetings, workshops or in-service activities that enhance the high school/college partnership and support implementation of the Tech Prep articulated program.

### ARTICULATION 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. College credits earned under this articulation agreement are at no cost to the student.
6. Columbia Basin Job Corps and/or student is responsible for any fees for WABO, ASME. & AWS welding certification testing.
7. Credits in this course may be applied to degree requirements in the following program(s):
  - Welding Technology
  - Maintenance Mechanics Technology

## COURSE COMPETENCIES

### WLD122 GAS METAL ARC WELDING I

1 – 3 Credits

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.

## College Tech Prep Notice to Students

The high school syllabus MUST include a notice to students indicating the course is Tech Prep approved and articulated with one or more colleges.

The following statement is a **sample** notice. You can use/modify the statement below to include in your syllabus:

**Example:**

This course is College Tech Prep approved and articulated with Big Bend Community College and the following program areas:

**Welding and  
Maintenance Mechanics Technology**

Students, who demonstrate proficiency of the college course competencies with a 'B' (3.0) or better grade, may earn college credit through the Tech Prep dual credit registration process. The college competencies are attached to this syllabus. During the (semester/year) all competencies will be covered in class...some may require additional independent work by the student. To earn college credit students are required to pass a skill check/assessment with the high school instructor.

Students may earn credit for the following college course(s):

WLD122 College Course Number      1-3 credits

Gas Metal Arc Welding I College Course Name