**Competency Cross-Reference - Welding Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Directions:** Evaluate the student by recording the appropriate number to indicate the degree of competency. The rating for each task should reflect employability readiness rather than the grades given in class.

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| **Rating Scale (0-6):** |
| 0 | **No Exposure -** no experience/knowledge in this area; program/ course did not provide instruction in this area |
| 1 | **Unsuccessful Attempt -** unable to meet knowledge or performance criteria and/or required significant assistance |
| 2 | **Partial Demonstration** - met some of the knowledge or performance criteria with or without minor assistance |
| 3 | **Knowledge Demonstrated** - met knowledge criteria without assistance at least once |
| 4 | **Performance Demonstrated** - met performance criteria without assistance at least once |
| 5 | **Repetitive Demonstration** - met performance and/or knowledge criteria without assistance on multiple occasions |
| 6 | **Mastered** - successfully applied knowledge or skills in this area to solve related problems independently |
| N/A | Not observed or does not apply |

| ***Score*** | ***#*** | ***Competency*** | [***Academic / Technical Standards***](https://www.aws.org/Standards-and-Publications/Codes-and-Standards/#numberOfResults=5)***STANDARDS LINK:*** [***CLICK HERE***](https://www.aws.org/Standards-and-Publications/Codes-and-Standards/#numberOfResults=5) | ***SkillsUSA Framework*** | ***Instructional Strategy*** | ***Unit Plan Title(s)*** |
| --- | --- | --- | --- | --- | --- | --- |
| Safety (to be integrated throughout the program)  |
|  | 1 | Demonstrate proper use and inspection of personal protective equipment (PPE). | Acad: SL.2.C / Tech: AWS EG2.0; ANSI Z49.1 | Technical Skills: Safety & Health | Lecture, Presentation, & Demonstration | General Safety/Tool Demo |
|  | 2 | Demonstrate proper safe work area and hot zone operation practices. | Acad: SL.2.C / Tech: AWS EG2.0; ANSI Z49.1 | Technical Skills: Safety & Health | Lecture, Presentation, & Demonstration | General Safety/Tool Demo |
|  | 3 | Demonstrate proper use and inspection of ventilation equipment. | Acad: SL.2.C / Tech: AWS EG2.0; ANSI Z49.1 | Technical Skills: Safety & Health | Lecture, Presentation, & Demonstration | General Safety/Tool Demo |
|  | 4 | Describe proper work actions for working in a confined space. | Acad: W.3.A / Tech: AWS EG2.0; ANSI Z49.1 | Technical Skills: Safety & Health | Lecture, Presentation, & Demonstration | General Safety/Tool Demo |
|  | 5 | Demonstrate proper use of precautionary labeling and SDS Information. | Acad: RI.1.B-C, RI.1.D. SL.2.C / Tech: AWS EG2.0; ANSI Z49.1 | Technical Skills: Safety & Health | Lecture, Presentation, & Demonstration | General Safety/Tool Demo |
|  | 6 | Demonstrate proper inspection and operation of equipment used for each welding and thermal cutting process used. | Acad: SL.2.C / Tech: AWS EG2.0; ANSI Z49.1 | Technical Skills: Safety & Health | Lecture, Presentation, & Demonstration | General Safety/Tool Demo |
|  | 7 | Recognize when first aid is needed for occupational injuries and follow proper procedures. | Acad: RI.1.B / Tech: AWS EG2.0; ANSI Z49.1 | Technical Skills: Safety & Health | Lecture, Presentation, & Demonstration | General Safety/Tool Demo |
|  | 8 | Take and pass the online modules through Career Safe. | Acad: / Tech: ANSI Z49.1 | Technical Skills: Safety & Health | Examination | OSHA-10 Test |
| Symbol Interpretation |
|  | 1 | Interpret welding symbols, abbreviations, and joint designs. | Acad: RI.1.C, G.GMD.B / Tech: AWS EG2.0(3.3.9) | Workplace Skills: Communication |  | Symbol/Drawings and Blueprints |
|  | 2 | Read and interpret basic prints. | Acad: RI.1.C, G.GMD.B / Tech: AWS EG2.0(3.3.9) | Workplace Skills: Planning, Organizing & Management |  | Symbol/Drawings and Blueprints |
|  | 3 | Make a layout of materials (e.g., plate, structural, and pipe fabrication). | Acad: RI.1.C, G.GMD.B / Tech: AWS EG2.0(3.3.9) | Workplace Skills: Planning, Organizing & Management |  | Symbol/Drawings and Blueprints |
|  | 4 | Prepare material for weld procedure specification (Welding Procedures Specification). | Acad: G.GM.B-C / Tech: AWS EG2.0(3.3.9) | Workplace Skills: Planning, Organizing & Management |  | Symbol/Drawings and Blueprints |
|  | 5 | Fabricate parts from a shop print using both | Acad: G.GM.B-C / Tech: AWS EG2.0(3.3.9) | Technical Skills: Job-Specific Skills |  | Symbol/Drawings and Blueprints |
| Metallurgy |
|  | 1 | Describe the different weld joint configurations. | Acad: W.3.A / Tech: AWS EG2.0(3.3.9), B1.11M | Workplace Skills: Planning, Organizing & Management | Lecture, Presentation,  | Weld Joints/weldments |
|  | 2 | Know what the weldment is called as they progress through them as they weld. | Acad: W.3.A / Tech: AWS EG2.0(3.3.9), B1.11M | Workplace Skills: Planning, Organizing & Management | Lecture, Presentation,  | Weld Joints/weldments |
|  | 3 | Describe theories of nondestructive and destructive weld testing. | Acad: W.3.A / Tech: AWS EG2.0(3.3.9), B1.11M | Workplace Skills: Decision Making | Destructive Testing | Weld Testing/Defects and Inspection (NDT & DT) |
|  | 4 | Prepare sample coupon for non-destructive and destructive testing per appropriate standard. | Acad: W.3.A / Tech: AWS EG2.0(3.3.9), B1.11M | Workplace Skills: Planning, Organizing & Management | Destructive Testing | Weld Testing/Defects and Inspection (NDT & DT) |
|  | 5 | Conduct non-destructive testing, including visual (inspect for undercut, overlap, porosity, slag, spatter, weld size) and dye penetrant (inspect for cracks, non-fused areas, holes/leaks). | Acad: W.3.A / Tech: AWS EG2.0(3.3.9), B1.11M | Workplace Skills: Decision Making | Destructive Testing | Weld Testing/Defects and Inspection (NDT & DT) |
|  | 6 | Conduct destructive testing, including root/face bends and side bends. | Acad: W.3.A / Tech: AWS EG2.0(3.3.9), B1.11M | Workplace Skills: Planning, Organizing & Management | Destructive Testing | Weld Testing/Defects and Inspection (NDT & DT) |
|  | 7 | Identify defects and take corrective action based on testing method(s). | Acad: W.3.A / Tech: AWS EG2.0(3.3.9), B1.11M | Workplace Skills: Decision Making | Destructive Testing | Weld Testing/Defects and Inspection (NDT & DT) |
|  | 8 | Describe different sizes of material and types. | Acad: W.3.A / Tech: AWS EG2.0 | Workplace Skills: Planning, Organizing & Management | Demonstration |  |
|  | 9 | Know how they are measured and what the proper name of the material is. | Acad: W.3.A / Tech: AWS EG2.0 | Workplace Skills: Planning, Organizing & Management | Demonstration |  |
|  | 10 | Describe how the material is sold and in what quantity. | Acad: W.3.A / Tech: AWS EG2.0 | Workplace Skills: Planning, Organizing & Management | Demonstration |  |
| Oxy-Fuel Cutting |
|  | 1 | Describe oxyfuel cutting. | Acad: W.3.A, RI.1.B-C / Tech: ANSI Z49.1, AWS C4.2, AWS EG2.0(3.3.8) | Workplace Skills: Planning, Organizing & Management | Demonstrations & Videos | Oxy-Fuel setup and cutting |
|  | 2 | Identify types of fuel/gases and their applications. | Acad: W.3.A, RI.1.B-C / Tech: ANSI Z49.1, AWS C4.2, AWS EG2.0(3.3.8) | Workplace Skills: Planning, Organizing & Management | Demonstrations & Videos | Oxy-Fuel setup and cutting |
|  | 3 | Identify, select, and set up oxyfuel equipment safely (e.g., cylinders, regulators, flame cutting apparatus). | Acad: W.3.A, RI.1.B-C / Tech: ANSI Z49.1, AWS C4.2, AWS EG2.0(3.3.8) | Workplace Skills: Planning, Organizing & Management | Guided practice | Oxy-Fuel setup and cutting |
|  | 4 | Light and adjust flame safely for cutting. | Acad: W.3.A, RI.1.B-C / Tech: ANSI Z49.1, AWS C4.2, AWS EG2.0(3.3.8) | Workplace Skills: Planning, Organizing & Management | Guided practice | Oxy-Fuel setup and cutting |
|  | 5 | Make straight, 90-degree, and beveled cuts on a plate. | Acad: G.GM.B / Tech: ANSI Z49.1, AWS C4.2, AWS EG2.0(3.3.8) | Technical Skills: Job-Specific Skills | Guided practice | Oxy-Fuel setup and cutting |
|  | 6 | Pierce holes, and cut slots and circles. | Acad: G.GM.B / Tech: ANSI Z49.1, AWS C4.2, AWS EG2.0(3.3.8) | Technical Skills: Job-Specific Skills | Guided practice | Oxy-Fuel setup and cutting |
|  | 7 | Perform square edge pattern cuts. | Acad: G.GM.B / Tech: ANSI Z49.1, AWS C4.2, AWS EG2.0(3.3.8) | Technical Skills: Job-Specific Skills | Guided practice | Oxy-Fuel setup and cutting |
|  | 8 | Perform scarfing operations to remove base/weld metal. | Acad: G.GM.B / Tech: ANSI Z49.1, AWS C4.2, AWS EG2.0(3.3.8) | Technical Skills: Job-Specific Skills | Guided practice | Oxy-Fuel setup and cutting |
|  | 9 | Layout, cut, and fit materials (structural shapes). | Acad: G.GM.B / Tech: ANSI Z49.1, AWS C4.2, AWS EG2.0(3.3.8) | Technical Skills: Job-Specific Skills | Guided practice | Oxy-Fuel setup and cutting |
|  | 10 | Set-up for mechanized oxyfuel cutting operations on carbon steel. | Acad: G.GM.B / Tech: ANSI Z49.1, AWS C4.2, AWS EG2.0(3.3.8) | Technical Skills: Job-Specific Skills | Guided practice | Oxy-Fuel setup and cutting |
|  | 11 | Perform straight, square edge cutting with track torch. | Acad: G.GM.B / Tech: ANSI Z49.1, AWS C4.2, AWS EG2.0(3.3.8) | Technical Skills: Job-Specific Skills | Guided practice | Oxy-Fuel setup and cutting |
|  | 12 | Perform straight, bevel edge cutting with track torch. | Acad: G.GM.B / Tech: ANSI Z49.1, AWS C4.2, AWS EG2.0(3.3.8) | Technical Skills: Job-Specific Skills | Guided practice | Oxy-Fuel setup and cutting |
|  | 13 | Identify and correct cutting problems. | Acad: G.GM.B / Tech: ANSI Z49.1, AWS C4.2, AWS EG2.0(3.3.8) | Workplace Skills: Planning, Organizing & Management | Guided practice | Oxy-Fuel setup and cutting |
| Shielded Metal Arc Welding (SMAW) |
|  | 1 | Performs safety inspections of shielded metal arc welding equipment and accessories. | Acad: / Tech: AWS EG2.0(3.3.4), ANSI Z49.1 | Workplace Skills: Planning, Organizing & Management | Guided practice | SMAW 6010/6011/7018 |
|  | 2 | Make minor external repairs to shielded metal arc welding equipment and accessories. | Acad: / Tech: AWS EG2.0(3.3.4), ANSI Z49.1 | Workplace Skills: Planning, Organizing & Management | Guided practice | SMAW 6010/6011/7018 |
|  | 3 | Describe shielded metal arc welding theory. | Acad: / Tech: AWS EG2.0(3.3.4), ANSI Z49.1 | Workplace Skills: Planning, Organizing & Management | Guided practice | SMAW 6010/6011/7018 |
|  | 4 | Set up for shielded metal arc welding operation on carbon steel. | Acad: / Tech: AWS EG2.0(3.3.4), ANSI Z49.1 | Workplace Skills: Planning, Organizing & Management | Guided practice | SMAW 6010/6011/7018 |
|  | 5 | Operate shielded metal arc welding equipment on carbon steel. | Acad: / Tech: AWS EG2.0(3.3.4), ANSI Z49.1 | Technical Skills: Job-Specific Skills | Guided practice | SMAW 6010/6011/7018 |
|  | 6 | Make fillet welds in all positions on carbon steel. | Acad: / Tech: AWS EG2.0(3.3.4), ANSI Z49.1 | Technical Skills: Job-Specific Skills | Guided practice | SMAW 6010/6011/7018 |
|  | 7 | Make groove welds in all positions on carbon steel. | Acad: / Tech: AWS EG2.0(3.3.4), ANSI Z49.1 | Technical Skills: Job-Specific Skills | Guided practice | SMAW 6010/6011/7018 |
|  | 8 | Passes shielded metal arc welding, welder performance qualification test on carbon steel (2G & 3G uphill, limited thickness test plates). | Acad: / Tech: AWS EG2.0(3.3.4), ANSI Z49.1 | Technical Skills: Job-Specific Skills | Guided practice | SMAW 6010/6011/7018 |
| Gas Metal Arc Welding (GMAW) |
|  | 1 | Describe gas metal arc welding theory | Acad: W.3.A / Tech: AWS EG2.0(3.3.5), ANSI Z49.1 | Workplace Skills: Planning, Organizing & Management | Demonstrations & Videos | GMAW |
|  | 2 | Identify and select shielding gases for various metals and transfer mode. | Acad: W.3.A / Tech: AWS EG2.0(3.3.5), ANSI Z49.1 | Workplace Skills: Planning, Organizing & Management | Demonstrations & Videos | GMAW |
|  | 3 | Identify, select, and set up equipment. | Acad: / Tech: AWS EG2.0(3.3.5), ANSI Z49.1 | Workplace Skills: Planning, Organizing & Management | Guided practice | GMAW |
|  | 4 | Adjust current, voltage and gas flow. | Acad: / Tech: AWS EG2.0(3.3.5), ANSI Z49.1 | Technical Skills: Job-Specific Skills | Guided practice | GMAW |
|  | 5 | Make weld in 2F position on carbon steel. | Acad: / Tech: AWS EG2.0(3.3.5), ANSI Z49.1 | Technical Skills: Job-Specific Skills | Guided practice | GMAW |
|  | 6 | Make weld in 3Fposition, vertical down with material 3/16”or thinner. | Acad: / Tech: AWS EG2.0(3.3.5), ANSI Z49.1 | Technical Skills: Job-Specific Skills | Guided practice | GMAW |
|  | 7 | Make weld in 3F position, vertical up, with material 3/16” or thicker. | Acad: / Tech: AWS EG2.0(3.3.5), ANSI Z49.1 | Technical Skills: Job-Specific Skills | Guided practice | GMAW |
|  | 8 | Make weld in 4F position. | Acad: / Tech: AWS EG2.0(3.3.5), ANSI Z49.1 | Technical Skills: Job-Specific Skills | Guided practice | GMAW |
|  | 9 | Make weld in 1G position. | Acad: / Tech: AWS EG2.0(3.3.5), ANSI Z49.1 | Technical Skills: Job-Specific Skills | Guided practice | GMAW |
|  | 10 | Make weld in 2G position. | Acad: / Tech: AWS EG2.0(3.3.5), ANSI Z49.1 | Technical Skills: Job-Specific Skills | Guided practice | GMAW |
|  | 11 | Make weld in 3G position, vertical down less than 3/16” thick. | Acad: / Tech: AWS EG2.0(3.3.5), ANSI Z49.1 | Technical Skills: Job-Specific Skills | Guided practice | GMAW |
| Flux Cored Arc Welding (FCAW-G & FCAW-S) |
|  | 1 | Describe flux-cored arc welding theory. | Acad: W.3.A / Tech: AWS EG2.0(3.3.6), EDU-3, ANSI Z49.1 | Workplace Skills: Planning, Organizing & Management | Demonstrations & Videos | FCAW-G & FCAW-S |
|  | 2 | Identify, select, and set up equipment. | Acad: W.3.A / Tech: AWS EG2.0(3.3.6), EDU-3, ANSI Z49.1 | Workplace Skills: Planning, Organizing & Management | Demonstrations & Videos | FCAW-G & FCAW-S |
|  | 3 | Identify and select cored wire electrodes for carbon steel. | Acad: W.3.A / Tech: AWS EG2.0(3.3.6), EDU-3, ANSI Z49.1 | Workplace Skills: Planning, Organizing & Management | Demonstrations & Videos | FCAW-G & FCAW-S |
|  | 4 | Adjust current, voltage, and gas flow. | Acad: / Tech: AWS EG2.0(3.3.6), EDU-3, ANSI Z49.1 | Technical Skills: Job-Specific Skills | Guided practice | FCAW-G & FCAW-S |
|  | 5 | Make weld in 2F position using gas shielded electrode. | Acad: / Tech: AWS EG2.0(3.3.6), EDU-3, ANSI Z49.1 | Technical Skills: Job-Specific Skills | Guided practice | FCAW-G & FCAW-S |
|  | 6 | Make weld in 3F using gas shielded electrode. | Acad: / Tech: AWS EG2.0(3.3.6), EDU-3, ANSI Z49.1 | Technical Skills: Job-Specific Skills | Guided practice | FCAW-G & FCAW-S |
|  | 7 | Make weld in 4F using gas shielded electrode. | Acad: / Tech: AWS EG2.0(3.3.6), EDU-3, ANSI Z49.1 | Technical Skills: Job-Specific Skills | Guided practice | FCAW-G & FCAW-S |
|  | 8 | Make weld in 1G position using gas shielded electrode. | Acad: / Tech: AWS EG2.0(3.3.6), EDU-3, ANSI Z49.1 | Technical Skills: Job-Specific Skills | Guided practice | FCAW-G & FCAW-S |
|  | 9 | Make weld in 2G position using gas shielded electrode. | Acad: / Tech: AWS EG2.0(3.3.6), EDU-3, ANSI Z49.1 | Technical Skills: Job-Specific Skills | Guided practice | FCAW-G & FCAW-S |
|  | 10 | Make weld in 3G using gas shielded electrodes. | Acad: / Tech: AWS EG2.0(3.3.6), EDU-3, ANSI Z49.1 | Technical Skills: Job-Specific Skills | Guided practice | FCAW-G & FCAW-S |
|  | 11 | Make weld in 4G position using gas shielded electrode. | Acad: / Tech: AWS EG2.0(3.3.6), EDU-3, ANSI Z49.1 | Technical Skills: Job-Specific Skills | Guided practice | FCAW-G & FCAW-S |
|  | 12 | Make weld in 2F using self-shielded electrodes. | Acad: / Tech: AWS EG2.0(3.3.6), EDU-3, ANSI Z49.1 | Technical Skills: Job-Specific Skills | Guided practice | FCAW-G & FCAW-S |
|  | 13 | Make weld in 3F position using self-shielded electrodes. | Acad: / Tech: AWS EG2.0(3.3.6), EDU-3, ANSI Z49.1 | Technical Skills: Job-Specific Skills | Guided practice | FCAW-G & FCAW-S |
|  | 14 | Make weld in 4F position using self-shielded electrode. | Acad: / Tech: AWS EG2.0(3.3.6), EDU-3, ANSI Z49.1 | Technical Skills: Job-Specific Skills | Guided practice | FCAW-G & FCAW-S |
|  | 15 | Make weld in 1G position using self-shielded electrodes. | Acad: / Tech: AWS EG2.0(3.3.6), EDU-3, ANSI Z49.1 | Technical Skills: Job-Specific Skills | Guided practice | FCAW-G & FCAW-S |
|  | 16 | Make weld in 2G position using self-shielded electrode. | Acad: / Tech: AWS EG2.0(3.3.6), EDU-3, ANSI Z49.1 | Technical Skills: Job-Specific Skills | Guided practice | FCAW-G & FCAW-S |
|  | 17 | Make weld in 3G position using self-shielded electrodes. | Acad: / Tech: AWS EG2.0(3.3.6), EDU-3, ANSI Z49.1 | Technical Skills: Job-Specific Skills | Guided practice | FCAW-G & FCAW-S |
|  | 18 | Make weld in 4G position using self-shielded electrode. | Acad: / Tech: AWS EG2.0(3.3.6), EDU-3, ANSI Z49.1 | Technical Skills: Job-Specific Skills | Guided practice | FCAW-G & FCAW-S |
|  | 19 | Identify welding problems, their causes, and take corrective action. | Acad: / Tech: AWS EG2.0(3.3.6), EDU-3, ANSI Z49.1 | Workplace Skills: Planning, Organizing & Management | Guided practice | FCAW-G & FCAW-S |
| Plasma Arc Cutting |
|  | 1 | Describe plasma cutting theory. | Acad: W.3.A / Tech: AWS EG2.0(3.3.8), ANSI Z49.1 | Workplace Skills: Planning, Organizing & Management | Demonstrations & Videos | Plasma Arc Cutting  |
|  | 2 | Set up and operate plasma cutting equipment (e.g., torch consumables, air supply, line filtration). | Acad: / Tech: AWS EG2.0(3.3.8), ANSI Z49.1 | Workplace Skills: Planning, Organizing & Management | Demonstrations & Videos | Plasma Arc Cutting  |
|  | 3 | Lay out and make straight line cuts. | Acad: G.GM.B-C, G.GMD.B / Tech: AWS EG2.0(3.3.8), ANSI Z49.1 | Technical Skills: Job-Specific Skills | Guided practice | Plasma Arc Cutting  |
|  | 4 | Lay out and make cuts (e.g., bevel, circular, and pattern). | Acad: G.GM.B-C, G.GMD.B / Tech: AWS EG2.0(3.3.8), ANSI Z49.1 | Technical Skills: Job-Specific Skills | Guided practice | Plasma Arc Cutting  |
| Gas Tungsten Arc Welding (GTAW) |
|  | 1 | Performs safety inspections of gas tungsten arc welding equipment and accessories. | Acad: / Tech: AWS EG2.0(3.3.7), C5.5, ANSI Z49.1 | Technical Skills: Job-Specific Skills | Guided practice | GTAW |
|  | 2 | Make minor external repairs to gas tungsten arc welding equipment and accessories. | Acad: / Tech: AWS EG2.0(3.3.7), C5.5, ANSI Z49.1 | Technical Skills: Job-Specific Skills | Guided practice | GTAW |
|  | 3 | Set up gas tungsten arc welding operations on carbon steel. | Acad: / Tech: AWS EG2.0(3.3.7), C5.5, ANSI Z49.1 | Technical Skills: Job-Specific Skills | Guided practice | GTAW |
|  | 4 | Operate gas tungsten arc welding equipment on carbon steel. | Acad: / Tech: AWS EG2.0(3.3.7), C5.5, ANSI Z49.1 | Technical Skills: Job-Specific Skills | Guided practice | GTAW |
|  | 5 | Make fillet welds in all positions on carbon steel. | Acad: / Tech: AWS EG2.0(3.3.7), C5.5, ANSI Z49.1 | Technical Skills: Job-Specific Skills | Guided practice | GTAW |
|  | 6 | Make groove welds in all positions on carbon steel. | Acad: / Tech: AWS EG2.0(3.3.7), C5.5, ANSI Z49.1 | Technical Skills: Job-Specific Skills | Guided practice | GTAW |
|  | 7 | Pass gas tungsten arc welder performance qualification test on carbon steel. | Acad: / Tech: AWS EG2.0(3.3.7), C5.5, ANSI Z49.1 | Technical Skills: Job-Specific Skills | Guided practice | GTAW |
|  | 8 | Set up for gas tungsten arc welding operations on austenitic stainless steel. | Acad: / Tech: AWS EG2.0(3.3.7), C5.5, ANSI Z49.1 | Technical Skills: Job-Specific Skills | Guided practice | GTAW |
|  | 9 | Operate gas tungsten arc welding on austenitic stainless steel. | Acad: / Tech: AWS EG2.0(3.3.7), C5.5, ANSI Z49.1 | Technical Skills: Job-Specific Skills | Guided practice | GTAW |
|  | 10 | Make fillet welds in the 1F, 2F, and 3F positions on austenitic stainless steel. | Acad: / Tech: AWS EG2.0(3.3.7), C5.5, ANSI Z49.1 | Technical Skills: Job-Specific Skills | Guided practice | GTAW |
|  | 11 | Make groove welds in the 1G and 2G positions on austenitic stainless steel. | Acad: / Tech: AWS EG2.0(3.3.7), C5.5, ANSI Z49.1 | Technical Skills: Job-Specific Skills | Guided practice | GTAW |
|  | 12 | Pass gas tungsten arc welder performance qualification test on austenitic stainless steel. | Acad: / Tech: AWS EG2.0(3.3.7), C5.5, ANSI Z49.1 | Technical Skills: Job-Specific Skills | Guided practice | GTAW |
|  | 13 | Set up for gas tungsten arc welding operations on aluminum. | Acad: / Tech: AWS EG2.0(3.3.7), C5.5, ANSI Z49.1 | Technical Skills: Job-Specific Skills | Guided practice | GTAW |
|  | 14 | Operate gas tungsten arc welding equipment on aluminum. | Acad: / Tech: AWS EG2.0(3.3.7), C5.5, ANSI Z49.1 | Technical Skills: Job-Specific Skills | Guided practice | GTAW |
|  | 15 | Make fillet welds in the 1F and 2F positions on aluminum. | Acad: / Tech: AWS EG2.0(3.3.7), C5.5, ANSI Z49.1 | Technical Skills: Job-Specific Skills | Guided practice | GTAW |
| Carbon Arc Cutting |
|  | 1 | Describe carbon arc gouging theory. | Acad: W.3.A / Tech: AWS EG2.0(3.3.8), ANSI Z49.1 | Workplace Skills: Planning, Organizing & Management | Demonstrations & Videos | Carbon Arc Cutting |
|  | 2 | Identify and select electrode, polarity, amperage, and air pressure. | Acad: / Tech: AWS EG2.0(3.3.8), ANSI Z49.1 | Workplace Skills: Planning, Organizing & Management | Demonstrations & Videos | Carbon Arc Cutting |
|  | 3 | Set up and operate carbon arc gouging equipment. | Acad: / Tech: AWS EG2.0(3.3.8), ANSI Z49.1 | Technical Skills: Job-Specific Skills | Guided practice | Carbon Arc Cutting |
|  | 4 | Remove weld material/back gouge. | Acad: / Tech: AWS EG2.0(3.3.8), ANSI Z49.1 | Technical Skills: Job-Specific Skills | Guided practice | Carbon Arc Cutting |
| Academic Skills - English/Language Arts |
|  | 1 | Gather, analyze, evaluate and use information from a variety of sources. | Acad: W.3.A (a-e) / Tech:  | Workplace Skills: Communication |  |  |
|  | 2 | Read and evaluate job-related material | Acad: RI.1.A-D, RI.2.A-D, RI.3.A-D / Tech:  | Workplace Skills: Decision Making |  |  |
|  | 3 | Participate in formal and informal presentations and discussions of issues and ideas | Acad: SL.1.A-C, SL.2.A-C / Tech:  | Workplace Skills: Communication |  |  |
| Academic Skills - Math |
|  | 1 | Solve problems involving scale drawings of real objects and… | Acad: G.GM.A.1, G.GM.B-D, 6.RP.A / Tech:  | Technical Skills: Job-Specific Skills |  |  |
|  | 2 | Visualize relationships between two-dimensional and three-dimensional objects | Acad: G.GM.B-C, 6.RP.A, G.GMD.B / Tech:  | Technical Skills: Job-Specific Skills |  |  |
|  | 3 | Make geometric constructions (…using various tools and methods) | Acad: G.GM.B-C, G.CO.D / Tech:  | Technical Skills: Job-Specific Skills |  |  |
|  | 4 | Apply geometric concepts (measurements) in modeling situations (objects/problems) | Acad: G.GM.B, G.MG.A, G.SRT.C / Tech:  | Technical Skills: Job-Specific Skills |  |  |
|  | 5 | Use geometric shapes, their measures, and their properties… | Acad: G.GM.B, G.MG.A.1, G.SRT.C / Tech:  | Technical Skills: Job-Specific Skills |  |  |
|  | 6 | Perform operations and solve problems with fractions and decimals | Acad: NF.A-B / Tech:  | Technical Skills: Job-Specific Skills |  |  |
|  | 7 | Create and evaluate expressions involving variables and exponents | Acad: EEI.A.2.a-e / Tech:  | Technical Skills: Job-Specific Skills |  |  |
|  | 8 | Understand and use ratios to solve problems | Acad: RP.A / Tech:  | Technical Skills: Job-Specific Skills |  |  |
|  | 9 | Use units (of measure) to solve problems | Acad: RA.B-C, EEI.A-B, A1.NQ.B / Tech:  | Technical Skills: Job-Specific Skills |  |  |
|  | 10 | Using (information), interpret key characteristics of…(numerical) relationships | Acad: RA.B-C, EEI.A-B, A1.IF.B.3 / Tech:  | Technical Skills: Job-Specific Skills |  |  |