# Competency Task List – Secondary Component

# Welding Technology/Welder CIP 48.0508

# High School Graduation Years 2022, 2023, 2024

## 100 Occupational Orientation and Safety

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| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Crosswalk |
| 101 | Complete time or job sheet, reports, or records. |   |   |
| 102 | Perform housekeeping duties daily. |  |  |
| 103 | Follow verbal instructions to complete work assignments and rules. |  |  |
| 104 | Follow written instructions to complete work assignments and rules. |  |  |
| 105 | Inspect and use Personal Protection Equipment (PPE) daily.  |  |  |
| 106 | Maintain proper organization and operation of work area. |  |  |
| 107 | Demonstrate proper use of ventilation equipment.  |  |  |
| 108 | Discuss proper hot work operation.  |  |  |
| 109 | Demonstrate knowledge of proper work actions for working in confined spaces.  |  |  |
| 110 | Identify Safety Data Sheets (SDS) and precautionary labeling.  |  |  |
| 111 | Inspect welding and thermal cutting equipment for safe operation. |  |  |
| 112 | Display familiarity with industrial and OSHA safety standards. |  |  |
| 113 | Identify oxyfuel safety procedures. |  |  |
| 114 | Identify arc welding/cutting safety procedures. |  |  |
| 115 | Follow emergency action plan. |  |  |

## 200 Principles of Welding

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| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Crosswalk |
| 201 | Identify major types of metals (ferrous and nonferrous) used in welding. |   |   |
| 202 | Describe the basic principles of heat, expansion, and contraction as they relate to metals. |   |   |
| 203 | RESERVED |   |   |
| 204 | Describe the industry accepted welding codes, standards, and procedures and their use. |   |   |
| 205 | Identify various joint designs (joint geometry). |   |   |
| 206 | Clean and prepare materials for welding and/or cutting. |  |  |
| 207 | Demonstrate proper use of hand tools. |  |  |
| 208 | Demonstrate proper use of standard measuring and layout tools. |  |  |
| 209 | Demonstrate proper use of power equipment. |  |  |

## 300 Welding, Drawing, and Weld Symbol Interpretation

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| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Crosswalk |
| 301 | Interpret basic elements of a drawing or sketch. |  |   |
| 302 | Interpret welding symbol information. |  |   |
| 303 | Fabricate parts from a drawing or sketch (class project). |  |  |
| 304 | Identify structural materials used in the metal fabrication field. |  |  |
| 305 | Perform basic metric conversion. |  |  |

## 400 Visual Examination, Inspection, and Testing

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| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Crosswalk |
| 401 | Evaluate cut surfaces and edges of prepared base metal parts for testing. |  |   |
| 402 | Identify and evaluate weld discontinuities as per accept/reject criteria. |  |   |
| 403 | Perform visual inspection, destructive, and non-destructive testing. |  |  |

## 500 Shielded Metal Arc Welding (SMAW)

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| --- | --- | --- | --- |
| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Crosswalk |
| 501 | Perform safety inspections of SMAW equipment. |   |   |
| 502 | Make minor external repairs to SMAW equipment. |   |   |
| 503 | Set up and operate SMAW equipment.  |  |  |
| 504 | RESERVED |  |  |
| 505 | RESERVED |  |  |
| 506 | RESERVED |  |  |
| 507 | Perform qualification test. |  |  |
| 508 | Pass fillet weld performance test in flat position. |  |  |
| 509 | Pass fillet weld performance test in horizontal position. |  |  |
| 510 | Pass fillet weld performance test in vertical position. |  |  |
| 511 | Pass fillet weld performance test in overhead position. |  |  |
| 512 | Pass groove weld performance test in flat position. |  |  |
| 513 | Pass groove weld performance test in horizontal position. |  |  |
| 514 | Pass groove weld performance test in vertical position. |  |  |
| 515 | Pass groove weld performance test in overhead position. |  |  |

## 600 Gas Metal Arc Welding (GMAW)

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| --- | --- | --- | --- |
| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Crosswalk |
| 601 | Perform safety inspections of GMAW equipment. |   |   |
| 602 | Make minor external repairs to GMAW equipment. |   |   |
| 603 | Set up and operate GMAW equipment.  |   |   |
| 604 | RESERVED |   |   |
| 605 | RESERVED |  |  |
| 606 | Pass performance test.  |  |  |
| 607 | Pass fillet weld performance test in flat position. |  |  |
| 608 | Pass fillet weld performance test in horizontal position. |  |  |
| 609 | Pass fillet weld performance test in vertical position. |  |  |
| 610 | Pass fillet weld performance test in overhead position. |  |  |
| 611 | Pass groove weld performance test in flat position. |  |  |
| 612 | Pass groove weld performance test in horizontal position. |  |  |
| 613 | Pass groove weld performance test in vertical position. |  |  |
| 614 | Pass groove weld performance test in overhead position. |  |  |

## 700 Flux Corded Arc Welding (FCAW)

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| --- | --- | --- | --- |
| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Crosswalk |
| 701 | Perform safety inspections of FCAW equipment.  |   |   |
| 702 | Make minor external repairs to FCAW equipment.  |  |  |
| 703 | Set up and operate FCAW equipment.  |  |  |
| 704 | RESERVED |  |  |
| 705 | Pass performance test. |  |  |
| 706 | RESERVED |  |  |
| 707 | Pass fillet weld performance test in flat position. |  |  |
| 708 | Pass fillet weld performance test in horizontal position. |  |  |
| 709 | Pass fillet weld performance test in vertical position. |  |  |
| 710 | Pass fillet weld performance test in overhead position. |  |  |
| 711 | Pass groove weld performance test in flat position. |  |  |
| 712 | Pass groove weld performance test in horizontal position. |  |  |
| 713 | Pass groove weld performance test in vertical position. |  |  |
| 714 | Pass groove weld performance test in overhead position. |  |  |

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## 800 Gas Tungsten Arc Welding (GTAW)

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| --- | --- | --- | --- |
| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Crosswalk |
| 801 | Perform safety inspections of GTAW equipment. |   |   |
| 802 | Make minor external repairs to GTAW equipment.  |   |   |
| 803 | Set up and operate GTAW equipment.  |   |   |
| 804 | RESERVED |  |  |
| 805 | Pass performance test on ferrous materials.  |  |  |
| 806 | Set up and operate GTAW on nonferrous materials. |  |  |
| 807 | RESERVED |  |  |
| 808 | Pass performance test on nonferrous materials.  |  |  |
| 809 | Pass fillet weld performance test in flat position on ferrous materials. |  |  |
| 810 | Pass fillet weld performance test in horizontal position on ferrous materials. |  |  |
| 811 | Pass fillet weld performance test in vertical position on ferrous materials. |  |  |
| 812 | Pass fillet weld performance test in overhead position on ferrous materials. |  |  |
| 813 | Pass fillet weld performance test in flat position on nonferrous materials. |  |  |
| 814 | Pass fillet weld performance test in horizontal position on nonferrous materials. |  |  |
| 815 | Pass fillet weld performance test in vertical position on nonferrous materials. |  |  |
| 816 | Pass fillet weld performance test in overhead position on nonferrous materials. |  |  |

## 900 Manual Oxy-fuel Gas Cutting (OFC)

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| --- | --- | --- | --- |
| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Crosswalk |
| 901 | Perform safety inspections of OFC equipment.  |   |   |
| 902 | Make minor external repairs to OFC equipment.  |   |   |
| 903 | Set up for manual OFC operations on steel. |   |   |
| 904 | Operate manual OFC equipment.  |  |  |
| 905 | Perform straight cutting operations on steel.  |  |  |
| 906 | Perform shape cutting operations on steel. |  |  |
| 907 | Perform bevel cutting operations on steel.  |  |  |
| 908 | Perform piercing operations on steel. |  |  |

## 1000 Mechanized Oxy-fuel Gas Cutting (OFC)

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| --- | --- | --- | --- |
| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Crosswalk |
| 1001 | Perform safety inspections of mechanized OFC equipment.  |   |   |
| 1002 | Make minor external repairs to mechanized OFC equipment. |   |   |
| 1003 | Set up and operate mechanized OFC equipment on steel. |   |   |
| 1004 | Perform straight mechanized OFC operations on steel.  |  |  |
| 1005 | Perform bevel mechanized OFC operations on steel.  |  |  |

## 1100 Manual Plasma Arc Cutting (PAC)

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Crosswalk |
| 1101 | Perform safety inspections of PAC equipment.  |   |   |
| 1102 | Make minor external repairs to PAC equipment.  |   |   |
| 1103 | Set up and operate manual PAC operations on ferrous and nonferrous materials.  |   |   |
| 1104 | Perform shape PAC operations on ferrous and nonferrous materials.  |  |  |
| 1105 | Perform gouging and scarfing PAC operations to remove base and weld metal on ferrous and nonferrous materials. |  |  |

## 1200 Manual Air Carbon Arc Cutting (CAC-A)

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| --- | --- | --- | --- |
| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Crosswalk |
| 1201 | Perform safety inspections of CAC-A equipment and accessories.  |   |   |
| 1202 | Make minor external repairs to CAC-A equipment and accessories. |   |   |
| 1203 | Set up and operate manual CAC-A gouging and cutting operations on steel.  |   |   |
| 1204 | Perform gouging and scarfing operations to remove base and weld metal on steel.  |  |  |

## 1300 Reserved

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| --- | --- | --- | --- |
| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Crosswalk |
| 1301 | RESERVED |   |   |
| 1302 | RESERVED |   |   |

1 Student Demonstrated Entry-Level Industry Proficiency as Indicated by (X)

Secondary CTE Instructor Signature \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Student Signature \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_