

# Standards Correlations

## Welding II (8673)

| Task  | SOL Correlations  |
|---|---|
| <b>Demonstrating Personal Qualities and Abilities</b> |   |
| Demonstrate creativity and innovation.                | English: 6.1, 6.3, 6.4, 6.6, 6.7, 6.9, 7.1, 7.3, 7.4, 7.6, 7.7, 7.9, 8.1, 8.3, 8.4, 8.6, 8.7, 8.9, 9.1, 9.5, 9.6, 9.8, 10.1, 10.5, 10.6, 10.8, 11.1, 11.5, 11.6, 11.8, 12.1, 12.5, 12.6, 12.8<br>History and Social Science: CE.1, CE.4, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WG.4, WHI.1, WHII.1<br>Mathematics: 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7, 6.10, 6.11, 6.12, 7.2, 7.3, 7.8, 7.9, 8.2, 8.4, 8.6, 8.7, 8.11, 8.12, 8.17, 8.18, A.9, AFDA.3, AFDA.4, AFDA.5, AFDA.6, AFDA.7, AFDA.8, AII.9, COM.1, COM.3, COM.4, COM.5, COM.8, DM.7, DM.1*, DM.10, DM.2*, DM.3*, PS.3*, PS.4*, PS.7*, PS.9*, PS.10*<br>Science: 6.1, BIO.1, CH.1, ES.1, LS.1, PS.1      |
| Demonstrate critical thinking and problem solving.    | English: 6.1, 6.3, 6.4, 6.5, 6.6, 6.7, 6.9, 7.1, 7.3, 7.4, 7.5, 7.6, 7.7, 7.9, 8.1, 8.3, 8.4, 8.5, 8.6, 8.7, 8.9, 9.1, 9.5, 9.6, 9.8, 10.1, 10.5, 10.6, 10.8, 11.1, 11.5, 11.6, 11.8, 12.1, 12.5, 12.6, 12.8<br>History and Social Science: CE.1, CE.4, CE.11, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WG.4, WHI.1, WHII.1<br>Mathematics: 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.10, 6.11, 7.2, 7.3, 7.8, 7.12, 7.13, 8.2, 8.4, 8.8, 8.9, 8.10, 8.11, A.8, A.9, G.1, G.13, G.14, AFDA.3, AFDA.5, AFDA.8, AII.9, AII.10, AII.11, COM.1, COM.3, COM.4, COM.5, COM.8, DM.4, DM.7, DM.1*, DM.2*, DM.3*, DM.9*, PS.9*, PS.10*<br>Science: 6.1, BIO.1, CH.1, ES.1, LS.1, PS.1 |
| Demonstrate initiative and self-direction.            | English: 6.1, 6.4, 6.6, 6.7, 6.9, 7.1, 7.4, 7.6, 7.7, 7.9, 8.1, 8.4, 8.6, 8.7, 8.9, 9.1, 9.5, 9.6, 9.8, 10.1, 10.5, 10.6, 10.8, 11.1, 11.5, 11.6, 11.8, 12.1, 12.5, 12.6, 12.8  |

| <b>Task</b>                                    | <b>SOL Correlations</b>   |
|--|---|
|  | History and Social Science: CE.1, CE.4, CE.11, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1  |
| Demonstrate integrity.                         | English: 6.1, 7.1, 8.1, 9.1, 9.5, 10.1, 10.5, 11.1, 11.5, 12.1, 12.5<br>History and Social Science: CE.1, CE.3, CE.4, GOVT.1, GOVT.16, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1  |
| Demonstrate work ethic.                        | English: 6.1, 7.1, 8.1, 9.1, 10.1, 11.1, 12.1<br>History and Social Science: CE.1, CE.4, CE.14, GOVT.1, GOVT.16, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1<br>Science: CH.1   |
| <b>Demonstrating Interpersonal Skills</b>      |   |
| Demonstrate conflict-resolution skills.        | English: 6.1, 6.2, 6.4, 6.6, 6.7, 6.9, 7.1, 7.2, 7.4, 7.6, 7.7, 7.9, 8.1, 8.2, 8.4, 8.6, 8.7, 8.9, 9.1, 10.1, 11.1, 12.1<br>History and Social Science: CE.1, CE.4, GOVT.1, USI.1, VUS.1  |
| Demonstrate listening and speaking skills.     | English: 6.1, 6.2, 6.4, 6.6, 7.1, 7.2, 7.4, 7.6, 8.1, 8.2, 8.4, 8.6, 9.1, 10.1, 11.1, 12.1<br>History and Social Science: CE.1, CE.4, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1   |
| Demonstrate respect for diversity.             | English: 6.1, 7.1, 8.1, 9.1, 10.1, 11.1, 12.1<br>History and Social Science: CE.1, CE.3, CE.4, GOVT.1, GOVT.16, USI.1, USII.1, USII.9, VUS.1, VUS.13, WG.1, WHI.1, WHII.1   |
| Demonstrate customer service skills.           | English: 6.1, 6.4, 6.7, 7.1, 7.4, 7.7, 8.1, 8.4, 8.7, 9.1, 9.5, 9.6, 10.1, 10.5, 10.6, 11.1, 11.5, 11.6, 12.1, 12.5, 12.6<br>History and Social Science: CE.1, CE.4, GOVT.1, GOVT.16, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1 |
| Collaborate with team members                  | English: 6.1, 7.1, 8.1, 9.1, 10.1, 11.1, 12.1<br>History and Social Science: CE.1, CE.3, CE.4, GOVT.1, GOVT.16, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1   |
| <b>Demonstrating Professional Competencies</b> |   |
| Demonstrate big-picture thinking.              | English: 6.1, 6.4, 7.1, 7.4, 8.1, 8.4, 9.1, 9.5, 10.1, 10.5, 11.1, 11.5, 12.1, 12.5   |

| Task  | SOL Correlations   |
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|   | History and Social Science: CE.1, CE.4, CE.12, GOVT.1, GOVT.15, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1  |
| Demonstrate career- and life-management skills.       | English: 6.1, 6.7, 7.1, 7.7, 8.1, 8.7, 9.1, 9.6, 10.1, 10.6, 11.1, 11.6, 12.1, 12.6<br>History and Social Science: CE.1, CE.4, CE.12, CE.14, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1<br>Mathematics: 8.4   |
| Demonstrate continuous learning and adaptability.     | English: 6.1, 6.4, 6.7, 6.9, 7.1, 7.4, 7.7, 7.9, 8.1, 8.4, 8.7, 8.9, 9.1, 9.5, 9.6, 9.8, 10.1, 10.5, 10.6, 10.8, 11.1, 11.5, 11.6, 11.8, 12.1, 12.5, 12.6, 12.8<br>History and Social Science: CE.1, CE.3, CE.4, CE.14, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1<br>Science: BIO.1, CH.1, LS.1, PH.1, PH.4, PS.1  |
| Manage time and resources.                            | English: 6.1, 6.2, 6.4, 6.7, 6.9, 7.1, 7.2, 7.4, 7.7, 7.9, 8.1, 8.2, 8.4, 8.7, 8.9, 9.1, 9.5, 9.6, 9.8, 10.1, 10.5, 10.6, 10.8, 11.2, 11.5, 11.6, 11.8, 12.2, 12.5, 12.6, 12.8<br>History and Social Science: CE.1, CE.4, CE.11, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1<br>Mathematics: 6.10, 6.11, 6.12, 7.2, 7.3, 7.8, 7.9, 7.10, 7.11, 7.12, 7.13, 8.4, 8.11, 8.12, 8.13, 8.14, 8.17, 8.18, A.4, A.5, A.8, A.9, AFDA.3, AFDA.4, AFDA.5, AFDA.6, AFDA.7, AFDA.8, COM.1, COM.3, COM.5, COM.8                           |
| Demonstrate information-literacy skills.              | English: 6.1, 6.2, 6.4, 6.6, 6.7, 6.9, 7.1, 7.2, 7.3, 7.4, 7.6, 7.7, 7.9, 8.1, 8.2, 8.3, 8.4, 8.6, 8.7, 8.9, 9.2, 9.5, 9.6, 9.8, 10.2, 10.5, 10.6, 10.8, 11.2, 11.5, 11.6, 11.8, 12.2, 12.5, 12.6, 12.8<br>History and Social Science: CE.1, CE.4, CE.14, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1<br>Mathematics: 6.10, 6.11, 7.8, 7.9, 8.11, 8.12, A.8, A.9, AFDA.3, AFDA.4, AFDA.6, AFDA.7, AFDA.8, DM.8, PS.1*, PS.2*, PS.3*, PS.4*, PS.7*, PS.8*, PS.9*, PS.10*<br>Science: 6.1, BIO.1, CH.1, ES.1, LS.1, PH.1, PS.1 |
| Demonstrate an understanding of information security. | English: 6.1, 6.2, 6.3, 6.4, 6.6, 6.7, 6.8, 6.9, 7.1, 7.2, 7.3, 7.4, 7.6, 7.7, 7.8, 7.9, 8.1, 8.2, 8.3, 8.4, 8.6, 8.7, 8.8, 8.9, 9.1, 9.2, 9.5, 9.6, 9.8, 10.1, 10.2, 10.5, 10.6, 10.8, 11.1, 11.2, 11.5, 11.6, 11.8, 12.1, 12.2, 12.5, 12.6, 12.8   |

| Task  | SOL Correlations  |
|---|---|
|   | History and Social Science: CE.1, CE.4, CE.14, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1<br>Mathematics: COM.10   |
| Maintain working knowledge of current information-technology (IT) systems.                      | English: 6.1, 6.3, 6.4, 6.6, 6.9, 7.1, 7.3, 7.4, 7.6, 7.9, 8.1, 8.3, 8.4, 8.6, 8.9<br>History and Social Science: CE.1, CE.4, CE.14, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1<br>Mathematics: 7.8, COM.1, COM.2, COM.7, COM.9, COM.10, COM.11, COM.16, COM.18, PS.17<br>Science: BIO.1, CH.1, ES.1, PH.1   |
| Demonstrate proficiency with technologies, tools, and machines common to a specific occupation. | History and Social Science: CE.1, CE.4, CE.14, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1<br>Mathematics: 6.10, 6.11, 7.9, 8.4, A.7, A.8, A.9, AFDA.1, AFDA.3, AFDA.5, AII.4, AII.7, AII.9, COM.1, COM.7, COM.10, COM.11, COM.12, COM.16<br>Science: CH.1, ES.1, LS.1, PH.1, PS.1  |
| Apply mathematical skills to job-specific tasks.  | English: 6.4, 6.6, 6.7, 7.4, 7.6, 7.7, 8.4, 8.6, 8.7, 9.5, 9.6, 10.5, 10.6, 11.5, 11.6, 12.5, 12.6<br>History and Social Science: CE.1, CE.4, CE.14, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1<br>Mathematics: 6.1, 6.2, 6.5, 6.6, 6.12, 6.13, 6.14, 7.1, 7.2, 7.3, 7.4, 7.5, 7.6, 7.8, 7.9, 7.11, 7.12, 7.13, 8.4, 8.5, 8.6, 8.8, 8.9, 8.10, 8.11, 8.12, 8.13, 8.14, 8.15, 8.16, 8.17, 8.18, A.1, A.3, A.4, A.5, A.7, A.8, A.9, AFDA.1, AFDA.3, AFDA.5, AFDA.8, AII.3, AII.7, AII.9, AII.10, COM.1, COM.7<br>Science: 6.1, BIO.1, CH.1, ES.1, LS.1, PH.1, PS.1 |
| Demonstrate professionalism.  | English: 6.1, 7.1, 8.1, 9.1, 10.1, 11.1, 12.1<br>History and Social Science: CE.1, CE.4, CE.14, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1   |
| Demonstrate reading and writing skills.   | English: 6.1, 6.6, 6.7, 7.1, 7.6, 7.7, 8.1, 8.6, 8.7, 9.1, 9.5, 9.6, 9.7, 10.1, 10.5, 10.6, 10.7, 11.1, 11.5, 11.6, 11.7, 12.1, 12.5, 12.6, 12.7<br>History and Social Science: CE.1, CE.4, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1   |

| <b>Task</b>  | <b>SOL Correlations</b>   |
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|  | Science: 6.1, PH.1, PS.1  |
| Demonstrate workplace safety.  | English: 6.4, 7.4, 8.4, 9.5, 10.5, 11.5, 12.5<br>History and Social Science: CE.1, CE.4, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1<br>Science: CH.1 |
| <b>Examining All Aspects of an Industry</b>  |   |
| Examine aspects of planning within an industry/organization.                                 | History and Social Science: GOVT.16   |
| Examine aspects of management within an industry/organization.                               |   |
| Examine aspects of financial responsibility within an industry/organization.                 |   |
| Examine technical and production skills required of workers within an industry/organization. |   |
| Examine principles of technology that underlie an industry/organization.                     |   |
| Examine labor issues related to an industry/organization.                                    | History and Social Science: GOVT.16   |
| Examine community issues related to an industry/organization.                                | History and Social Science: GOVT.16   |
| Examine health, safety, and environmental issues related to an industry/organization.        | History and Social Science: GOVT.16   |
| <b>Addressing Elements of Student Life</b>   |   |
| Identify the purposes and goals of the student organization.                                 |   |

| <b>Task</b>   | <b>SOL Correlations</b>  |
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| Explain the benefits and responsibilities of membership in the student organization as a student and in professional/civic organizations as an adult.   |  |
| Demonstrate leadership skills through participation in student organization activities, such as meetings, programs, and projects.   |  |
| Identify Internet safety issues and procedures for complying with acceptable use standards.   |  |
| <b>Exploring Work-Based Learning</b>  |  |
| Identify the types of work-based learning (WBL) opportunities.  |  |
| Reflect on lessons learned during the WBL experience.   |  |
| Explore career opportunities related to the WBL experience.   |  |
| Participate in a WBL experience, when appropriate.  |  |
| <b>Applying Basic Safety Standards</b>  |  |
| Comply with federal, state, and local safety requirements, including the Occupational Safety and Health Administration (OSHA), Virginia Occupational Safety and Health (VOSH) Program, and Environmental Protection Agency (EPA) regulations. | English: 11.5, 11.8, 12.5, 12.8<br>History:<br>WHII 8<br>VUS 8<br>Govt 7, 8, 9 |

| Task   | SOL Correlations   |
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|  | Science:<br>CH.1   |
| Maintain a safe working environment.                                 | English: 11.5, 12.5<br><br>History:<br>WHII 8<br>VUS 8<br><br>Govt 7, 8, 9             |
| Explain safe working practices around electrical hazards.            | English: 11.3, 11.5, 12.3, 12.5<br><br>History:<br>WHII 8<br>VUS 8<br><br>Govt 7, 8, 9 |
| Identify emergency first aid procedures.                             | English: 11.5, 12.5<br><br>History:<br>WHII 8<br>VUS 8<br><br>Govt 7, 8, 9             |
| Identify the types of fires and the methods used to extinguish them. | English: 11.5, 12.5<br><br>History:<br>WHII 8<br>VUS 8                                 |

| Task   | SOL Correlations   |
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|  | Govt 7, 8, 9<br><br>Science:<br><br>CH.1                                   |
| Demonstrate the use of a fire extinguisher.                              | History:<br>WHII 8<br>VUS 8<br><br>Govt 7, 8, 9                            |
| Identify personal protective equipment (PPE) requirements.               | English: 11.5, 12.5<br><br>History:<br>WHII 8<br>VUS 8<br><br>Govt 7, 8, 9 |
| Inspect PPE to determine whether it is safe to use.                      | English: 11.5, 12.5<br><br>History:<br>WHII 8<br>VUS 8<br><br>Govt 7, 8, 9 |
| Describe ventilation requirements and regulations pertaining to welding. | English: 11.5, 12.5<br><br>History:<br>WHII 8<br>VUS 8<br><br>Govt 7, 8, 9 |

| Task   | SOL Correlations   |
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| Inspect hand and power tools to visually identify defects.         | English: 11.5, 12.5<br><br>History:<br>WHII 8<br>VUS 8<br><br>Govt 7, 8, 9 |
| Demonstrate lifting and carrying techniques.                       | English: 11.5, 12.5<br><br>History:<br>WHII 8<br>VUS 8<br><br>Govt 7, 8, 9 |
| Identify types of ladders.   | English: 11.5, 12.5  |
| Demonstrate safe laddering techniques for various types of ladders | English: 11.5, 12.5<br><br>History:<br>WHII 8<br>VUS 8<br><br>Govt 7, 8, 9 |
| Describe safe scaffolding techniques.                              | English: 11.5, 12.5<br><br>History:<br>WHII 8<br>VUS 8<br><br>Govt 7, 8, 9 |
| Report injuries.   | English: 11.1, 11.5, 11.6, 11.7, 12.1, 12.5, 12.6, 11.7                    |

| Task  | SOL Correlations   |
|---|--|
|   | History:<br>WHII 8<br>VUS 8<br><br>Govt 7, 8, 9  |
| Report personal, environmental, and equipment safety violations to the appropriate authority. | English: 11.1, 11.5, 11.6, 11.7, 12.1, 12.5, 12.6, 12.7<br><br>History:<br>WHII 8<br>VUS 8<br><br>Govt 7, 8, 9 |
| Pass the safety exam.   | English: 11.5, 12.5<br><br>History:<br>WHII 8<br>VUS 8<br><br>Govt 7, 8, 9                                     |
| <b>Working with Documents and Drawings</b>  |  |
| Interpret elements of a drawing or sketch.  | English: 11.5, 12.5  |
| Interpret welding symbol information.   | English: 11.5, 12.5  |
| Convert metric system measurements to and from U.S. customary (standard) system measurements. | English: 11.5, 12.5<br><br>Science:<br><br>CH.1  |
| Apply basic measuring skills to welding operations.   | English: 11.5, 12.5  |

| <b>Task</b>  | <b>SOL Correlations</b>   |
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| Calculate dimensions from a drawing with incomplete dimensions.                  | English: 11.5, 12.5<br><br>Mathematics: G.8, G.9, G.11, G.14, AII.3 |
| Follow the instructions on a job specifications sheet.                           | English: 11.5, 12.5   |
| Interpret dimensions from a drawing with incomplete dimensions.                  | English: 11.5, 12.5<br><br>Mathematics: G.8, G.9, G.11, G.14, AII.3 |
| Fabricate simple parts from a drawing or a sketch.                               | English: 11.5, 12.5   |
| <b>Oxyfuel Gas Gutting (OFC Track Burner)</b>                                    |   |
| Describe the theories behind machine OFC track burner.                           | English: 11.5, 12.5   |
| Perform safety inspections of all equipment and accessories.                     | English: 11.5, 12.5   |
| Identify minor external repairs to all equipment and accessories.                | English: 11.5, 12.5   |
| Set up for machine OFC track burner operations on carbon steel.                  | English: 11.5, 12.5   |
| Operate machine OFC track burner equipment.                                      | English: 11.5, 12.5   |
| Perform straight-cutting operations on carbon steel.                             | English: 11.5, 12.5   |
| Perform bevel-cutting operations on carbon steel.                                | English: 11.5, 12.5   |
| <b>Demonstrating Thermal Cutting for Oxyfuel, Plasma, and Carbon Arc Cutting</b> |   |
| Describe the theories behind thermal cutting processes.                          | English: 11.5, 12.5   |

| <b>Task</b>   | <b>SOL Correlations</b> |
|---|-------------------------|
| Explain why one form of cutting is preferable to another.                                   | English: 11.5, 12.5     |
| Perform safety inspections of all equipment and accessories.                                | English: 11.5, 12.5     |
| Identify minor external repairs to all equipment and accessories.                           | English: 11.5, 12.5     |
| Set up for manual OFC operations and base metal preparation on carbon steel.                | English: 11.5, 12.5     |
| Operate manual OFC equipment.   | English: 11.5, 12.5     |
| Set up for plasma arc operations and base metal preparation on various metals.              | English: 11.5, 12.5     |
| Operate plasma arc equipment.   | English: 11.5, 12.5     |
| Set up for manual air carbon arc cutting (CAC-A) equipment.                                 | English: 11.5, 12.5     |
| Operate carbon arc equipment.   | English: 11.5, 12.5     |
| Perform metal removal operations on carbon steel.   | English: 11.5, 12.5     |
| <b>Demonstrating Gas Tungsten Arc Welding (GTAW)</b>  |                         |
| Describe the theories behind GTAW.  | English: 11.5, 12.5     |
| Perform safety inspections of all equipment and accessories.                                | English: 11.5, 12.5     |
| Identify minor external repairs to all equipment and accessories.                           | English: 11.5, 12.5     |
| Set up for GTAW operations and base metal preparation on ferrous and non-ferrous materials. | English: 11.5, 12.5     |
| Operate GTAW equipment.   | English: 11.5, 12.5     |
| Perform 1F and 2F fillet welds on various materials.  | English: 11.5, 12.5     |
| Perform 1G-groove welds on carbon steel, limited thickness.                                 | English: 11.5, 12.5     |

| <b>Task</b>  | <b>SOL Correlations</b>         |
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| Perform 1F–2F welds on aluminum.   | English: 11.5, 12.5             |
| Perform 1G welds on aluminum.  | English: 11.5, 12.5             |
| Perform 1F–2F welds on stainless steel.  | English: 11.5, 12.5             |
| Perform 1G–2G welds on stainless steel.  | English: 11.5, 12.5             |
| <b>Demonstrating Shielded Metal Arc Welding (SMAW)</b>   |                                 |
| Perform single-pass and multi-pass fillet welds on carbon steel in various positions.                              | English: 11.5, 12.5             |
| Perform groove welds on carbon steel, limited thickness, in various positions.                                     | English: 11.5, 12.5             |
| <b>Demonstrating Gas Metal Arc Welding (GMAW)</b>  |                                 |
| Perform single and multi-pass pass welds on carbon steel, limited thickness, in various positions.                 | English: 11.5, 12.5             |
| Perform groove welds on carbon steel, limited thickness, using various modes of transfer and in various positions. | English: 11.5, 12.5             |
| <b>Demonstrating Visual Examination</b>  |                                 |
| Evaluate cut surfaces and edges of prepared base metal parts.  | English: 11.1, 11.5, 12.1, 12.5 |
| Evaluate tack, intermediate layers, and completed welds.   | English: 11.1, 11.5, 12.1, 12.5 |