

Welding Technology Technical Standards

Criteria: Critical thinking and/problem solving

Standard:

- A) Demonstrate ability to use logic and technical analysis to identify the strengths and weaknesses of different approaches to complete welding tasks.
 - 1) Example: Demonstrate judgment and decision making as required to organize various tasks to complete welding assignments and projects.
- B) Demonstrate personal time management to complete projects by given deadlines.
 - 1) Example: Establish and manage time requirements for welding project completion.
 - 2) Example: Use self-evaluation of performance to determine new approaches for personal improvement
- C) Exhibit ability to translate written and/or verbal information into actual projects.
- D) Demonstrate ability to execute work requirements in accordance with written instructions.
 - 1) Example: Determine solutions and procedures to guarantee conformance with welding tolerances and specifications.
- E) Exhibit deductive reasoning.
 - 1) Example: Exhibit the ability to analyze documentation like blueprints and welding procedures specifications and then use this knowledge to build, fabricate, weld projects and/or structures.

Criteria: Communication

Standard:

- A) Demonstrate use of multiple approaches to convey information.
 - 1) Example: Use a variety of strategies to convey the necessary welding information required to complete a specific welding task or project.
- B) Demonstrate ability to follow verbal and written directions.
 - 1) Example: Discuss available alternatives and methods that may be used to accomplish the objective.
- C) Discuss directions and methods required to complete a specific welding task.
 - 1) Example: Use oral expression, reading, and writing comprehension to verify the information was received.
- D) Demonstrate use of industry specific welding symbols to communicate information.
 - 1) Example: Use of welding symbols to represent information on blueprints, projects, work orders, and welding procedure specifications.

Criteria: Motor Skills

Standard:

- A) Demonstrate physical abilities including: standing, sitting, walking, stooping, crawling, reaching, squatting, lifting, and bending.
 - 1) Example: Demonstrate ability to perform physical welding and cutting operations in an industrial laboratory while wearing all required personal protective equipment.
- B) Exhibit full range-of-motion of all extremities.
 - 1) Example: Demonstrate ability to perform various welding and cutting tasks while the body is in an awkward and/or uncomfortable position.
- C) Demonstrate balance sufficient to conduct precision repetitive movements.
 - 1) Example: Demonstrate ability to perform repetitive physical movements and motor skills intermittently and/or continuously for extended periods of time.
- D) Demonstrate ability to keep balance and equilibrium when in various physical positions.
- E) Demonstrate ability to perform controlled accurate movements, motor skills, and techniques with both hands and both arms independently and/or simultaneously.

- 1) Example: Demonstrate ability to continuously improve and further develop manual motor skills and welding techniques.
- 2) Example: Demonstrate ability to develop and refine manual dexterity motor skills to implement various welding techniques.

Criteria: Professional Conduct

Standard:

- A) Function effectively and efficiently during demanding seasonal workload periods.
- B) Incorporate professional standards of practice into all activities.
 - 1) Example: Maintain an understanding and effective relationships with customers, colleagues, faculty, staff and other professionals.
 - 2) Example: Work effectively with a team in an academic or live project setting.
 - 3) Example: Refrain from using improper grammar, profane or inappropriate communications
- C) Demonstrate integrity and accountability during field work and academic setting.
 - 1) Example: Complete all assignments in a timely manner.
 - 2) Example: Respond appropriately to constructive feedback provided by fellow students, faculty, staff, and customers.
- D) Present self in a professional manner during field projects and academic settings.
 - 1) Example: Wear appropriate clothing that is not distracting or offensive when in the learning environment or that may cause an unsafe environment.
- E) Utilize computers correctly, effectively and professionally to acquire information and to communicate with others.

Criteria: Sensory

Standard:

- A) Demonstrate hearing ability sufficient to communicate with peers in close or far proximity.
 - 1) Example: Communicate effectively with other welders or coworkers inside of an industrial shop or in the field by voice, loud speaker, phone, and/or two-way radio.
- B) Demonstrate hearing awareness of potentially hazardous industrial equipment.
 - 1) Example: Hear and detect safety hazards like flammable gas leaks. For example: welders are notified of gas leaks with a repeating buzzer sound.
- C) Demonstrate ability sufficient to detect contaminant odors in the workplace.
 - 1) Example: Detect hazardous and/or objectionable welding fumes.
- D) Demonstrate ability to detect flammable gas leaks.
 - 1) Example: Detect specific flammable gas leaks like acetylene or propylene gas.

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