

Welding Technician - Entry Level

Levels:	Grades 9-12
Units of Credit:	1.00
CIP Code:	48.0508
Core Code:	40-10-00-00-110
Prerequisite:	None
Skill Test:	595

COURSE DESCRIPTION

Students will learn basic welding skills that will prepare them to apply technical knowledge and skill in the workplace and in project construction. Students will learn and practice knowledge, attitude, skills, and habits required for performing tasks autonomously, including the selection and use of appropriate techniques and equipment with minimum supervision.

CORE STANDARDS, OBJECTIVES, AND INDICATORS

STANDARD 1

Students will understand welding orientation.

Objective 1: Identify welding processes.

Objective 2: Prepare time or job cards, reports, or records.

Objective 3: Follow verbal instructions to complete work assignments.

Objective 4: Follow written details to complete work assignments.

STANDARD 2

Students will understand and use welding safety and first aid.

Objective 1: Complete a student safety pledge (disclosure statement).

Objective 2: Respond to first aid requirements.

Objective 3: Follow safe practices.

Objective 4: Perform housekeeping duties.

Objective 5: Successfully complete safety tests on equipment use.

STANDARD 3

Students will identify welding tools and equipment.

Objective 1: Identify basic welding hand tools (e.g., safety glasses, welding helmet, chipping hammer, etc.).

Objective 2: Identify basic power tools and equipment (e.g., shielded metal arc welder, gas metal arc welder, bench grinder, etc.).

STANDARD 4

Students will use basic math and measuring skills.

Objective 1: Perform basic math conversions from fractions to decimals.

Objective 2: Read and correctly use a tape measure, rule, and square.

Objective 3: Perform basic layout techniques.

STANDARD 5

Students will read and interpret welding blueprints.

Objective 1: Apply information found in the information block of the drawing

Objective 2: Identify basic views used in blueprints, including assembly, detail, and fit-up drawings.

Objective 3: Identify common types of lines used in blueprints, including object, hidden, center, and construction lines.

STANDARD 6

Students will identify and apply basic welding symbols.

Objective 1: Identify and interpret basic welding symbols (e.g., square groove weld, fillet weld, field weld, reference line, etc.).

Objective 2: Draw welding symbols for given specifications.

Objective 3: Interpret a welding print and welding procedure specifications.

STANDARD 7

Students will use shielded metal arc welding (SMAW) processes.

Objective 1: Set up for SMAW operations on carbon steel.

Objective 2: Start and restart an arc and run a bead on carbon steel.

Objective 3: Build a weld pad on carbon steel in the flat position.

Objective 4: Make 1F (flat position-fillet weld) welds on carbon steel.

Objective 5: Make 2F (horizontal position-fillet weld) welds on carbon steel.

Objective 6: Make 1G (flat position-groove weld) welds on carbon steel.

Objective 7: Make 2G (horizontal position-groove weld) welds on carbon steel.

STANDARD 8

Students will use manual oxyfuel gas cutting processes.

Objective 1: Perform safety inspections of equipment and accessories.

Objective 2: Set up for manual oxyfuel gas cutting operations on carbon steel.

Objective 3: Perform straight cutting operations on carbon steel.

Objective 4: Perform shape-cutting operations on carbon steel.

Objective 5: Perform bevel-cutting operations on carbon steel.

Objective 6: Pierce a hole through a carbon steel plate.

STANDARD 9

Students will use gas metal arc welding (GMAW) processes.

Objective 1: Set up for GMAW operations on carbon steel.

Objective 2: Start and restart an arc and backfill at the edge while running a bead on carbon steel.

Objective 3: Use Short Circuit Transfer welding process to make 1F (flat position-fillet weld) welds on carbon steel.

Objective 4: Use Short Circuit Transfer welding process to make 2F (horizontal position-fillet weld) welds on carbon steel.

Objective 5: Use Short Circuit Transfer welding process to make 1F (flat position-fillet weld) multi-pass weld on carbon steel.

Objective 6: Use Short Circuit Transfer welding process to make 1G (flat position-groove weld) welds on carbon steel.

Objective 7: Use Short Circuit Transfer welding process to make 2G (horizontal position-groove weld) welds on carbon steel.