Welding Technician - Intermediate Level

Levels: Grades 10-12
Units of Credit: 1.00
CIP Code: 48.0510
Core Code: 40-10-00-00-112
Prerequisite: Welding Technician – Entry Level
Skill Test: 596

COURSE DESCRIPTION

Students will learn intermediate 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 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 2
Students will read and interpret welding blueprints.

Objective 1: Interpret the tolerance dimensions found on a blueprint in decimals, fractions, and degrees.

Objective 2: Draw blueprints for simple welding projects.

STANDARD 3
Students will identify and apply intermediate welding symbols.

Objective 1: Identify and interpret intermediate welding symbols, including bevel groove weld, plug or slot weld, melt through, and contour symbols.

Objective 2: Draw welding symbols for given specifications.

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

STANDARD 4
Students will use flux cored arc welding (FCAW) process.

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

Objective 2: Make 1F (flat position-fillet weld) welds on carbon steel.

Objective 3: Make 2F (horizontal position-fillet weld) welds on carbon steel.

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

STANDARD 5
Students will use gas tungsten arc welding (GTAW) process.

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

Objective 2: Make 1F (flat position-fillet weld) welds on carbon steel.

Objective 3: Make 2F (horizontal position-fillet weld) welds on carbon steel.

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

STANDARD 6
Students will use gas metal arc welding (GMAW) processes.

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

Objective 2: Use Axial Spray Transfer mode to make 1F (flat position-fillet weld) welds on carbon steel.

Objective 3: Use Axial Spray Transfer mode to make 2F (horizontal position-fillet weld) welds on carbon steel.

Objective 4: Use Axial Spray Transfer mode to make 1F (flat position-fillet weld) multi-pass weld on carbon steel.

Objective 5: Use Axial Spray Transfer mode to make 1G (flat position-groove weld) welds on carbon steel.

Objective 6: Use Axial Spray Transfer mode to make 2G (horizontal position-groove weld) welds on carbon steel.

STANDARD 7
Students will use air carbon arc gouging process.

Objective 1: Set up for air carbon arc gouging operations on carbon steel.

Objective 2: Perform straight gouging operations on carbon steel.

Objective 3: Perform shape-gouging operations on carbon steel.

Objective 4: Pierce a hole through a carbon steel plate.

STANDARD 8
Students will use plasma arc cutting process.

Objective 1: Set up for plasma arc cutting operations on carbon steel.

Objective 2: Perform straight cutting operations on carbon steel.

Objective 3: Perform shape-cutting operations on carbon steel.

Objective 4: Pierce a hole through a carbon steel plate.

STANDARD 9

Students will understand and use employment skills.

Objective 1: Build a job search network and find job leads.

Objective 2: Write a résumé and create a job portfolio

Objective 3: Write a letter of application.

Objective 4: Complete a job application.

Objective 5: Participate in an actual or simulated job interview.

Skills USA PDP requirements—optional but recommended