

Welding Technician, Intermediate

EXAM INFORMATION

Items

53

Points

62

Prerequisites

WELDING TECHNICIAN ENTRY LEVEL
(595)

Grade Level

10-12

Course Length

ONE YEAR

Career Cluster

AGRICULTURE, FOOD AND NATURAL
RESOURCES
ARCHITECTURE AND CONSTRUCTION
MANUFACTURING
SCIENCE, TECHNOLOGY, ENGINEERING
AND MATHEMATICS

Performance Standards

INCLUDED

Certificate Available

YES

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.

EXAM BLUEPRINT

STANDARD**PERCENTAGE OF EXAM**

| | |
|-------------------------------|-----|
| 1- Safety & First Aid | 13% |
| 2- Blueprints | 10% |
| 3- Symbols | 13% |
| 4- FCAW Process | 17% |
| 5- GTAW Process | 11% |
| 6- GMAW Process | 9% |
| 7- CAC-A (gouging) Process | 11% |
| 8- Plasma Arc Cutting Process | 10% |
| 9- Employment Skills | 6% |



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 1 Performance Evaluation included below (Optional)

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 2 Performance Evaluation included below (Optional)

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, intermittent fillet weld, and contour symbols.
- Objective 2 Identify and interpret drawings describing the anatomy of a groove and fillet weld.
- Objective 3 Draw welding symbols for given specifications
- Objective 4 Interpret a welding print and welding procedure specifications.

Standard 3 Performance Evaluation included below (Optional)

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 4 Performance Evaluation included below (Optional)

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 5 Performance Evaluation included below (Optional)

STANDARD 6

STUDENTS WILL USE GAS METAL ARC WELDING (GMAW) PROCESS

- Objective 1 Set up for GMAW operations on carbon steel.
- Objective 2 Use Spray Transfer mode to make 1F (flat position-fillet weld) welds on carbon steel.
- Objective 3 Use Spray Transfer mode to make 2F (horizontal position-fillet weld) welds on carbon steel.
- Objective 4 Use Spray Transfer mode to make 1F (flat position-fillet weld) multi-pass weld on carbon steel
- Objective 5 Use Spray Transfer mode to make 1G (flat position-groove weld) welds on carbon steel.
- Objective 6 Use Spray Transfer mode to make 2G (horizontal position-groove weld) welds on carbon steel.

Standard 6 Performance Evaluation included below (Optional)

STANDARD 7

STUDENTS WILL USE CARBON ARC CUTTING (CAC-A) OR GOUGING PROCESS

- Objective 1 Set up for arc cutting (CAC-A) 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 7 Performance Evaluation included below (Optional)



STANDARD 8

STUDENTS WILL USE THE 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 8 Performance Evaluation included below (Optional)

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.
- Objective 6 Work place ethics.

Standard 9 Performance Evaluation included below (Optional)



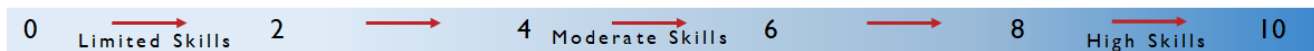
Welding Technician, Intermediate Performance Standards (Optional)

Performance assessments may be completed and evaluated at any time during the course. The following performance skills are to be used in connection with the associated standards and exam. To pass the performance standard the student must attain a performance standard average of **8 or higher** on the rating scale. Students may be encouraged to repeat the objectives until they average **8 or higher**.

Students Name _____

Class _____

PERFORMANCE RATING SCALE



STANDARD 1 – Safety & First Aid

Score:

- Understand and use welding safety and first aid.
 - Complete a student safety pledge (Disclosure Statement).
 - Respond to first aid requirements.
 - Follow safe practices
 - Perform housekeeping duties.
 - Successfully complete safety tests on equipment use.

STANDARD 2 – Blueprints

Score:

- Read and interpret welding blueprints.
 - Interpret the tolerance dimensions found on a blueprint in decimals, fractions, and degrees.
 - Draw blueprints for simple welding projects.

STANDARD 3 – Symbols

Score:

- Identify and apply intermediate welding symbols.
 - Identify and interpret intermediate welding symbols, including bevel groove weld, plug or slot weld, melt through, intermittent fillet weld, and contour symbols.
 - Identify and interpret drawings describing the anatomy of a groove and fillet weld.
 - Draw welding symbols for given specifications.
 - Interpret a welding print and welding procedure specifications.

STANDARD 4 – FCAW Process

Score:

- Use the Flux Cored Arc Welding (FCAW) process.
 - Set up for FCAW operations on carbon steel.
 - Make 1F (flat position-fillet weld) welds on carbon steel.
 - Make 2F (horizontal position-fillet weld) welds on carbon steel.
 - Make 1G (flat position-groove weld) welds on carbon steel.



STANDARD 5 – GTAW Process

Score:

- Use the Gas Tungsten Arc Welding (GTAW) process.
 - Set up for GTAW operations on carbon steel.
 - Make 1F (flat position-fillet weld) welds on carbon steel.
 - Make 2F (horizontal position-fillet weld) welds on carbon steel.
 - Make 1G (flat position-groove weld) welds on carbon steel.

STANDARD 6 – GMAW Process

Score:

- Use the Gas Metal Arc Welding (GMAW) process.
 - Set up for GMAW operations on carbon steel.
 - Use Spray Transfer mode to make 1F (flat position-fillet weld) welds on carbon steel.
 - Use Short Spray Transfer mode to make 2F (horizontal position-fillet weld) welds on carbon steel.
 - Use Short Spray Transfer mode to make 1F (flat position-fillet weld) multi-pass weld on carbon steel.
 - Use Short Spray Transfer mode to make 1G (flat position-groove weld) welds on carbon steel.
 - Use Short Spray Transfer mode to make 2G (horizontal position-groove weld) welds on carbon steel.

STANDARD 7 – CAC-A (gouging) Process

Score:

- Use the Carbon Arc Cutting (CAC-A) or gouging process.
 - Set up for Carbon Arc Cutting (CAC-A) gouging operations on carbon steel.
 - Perform straight gouging operations on carbon steel.
 - Perform shape-gouging operations on carbon steel.
 - Pierce a hole through a carbon steel plate.

STANDARD 8 – Plasma Arc Cutting Process

Score:

- Use the Plasma Arc Cutting process.
 - Set up for Plasma Arc Cutting operations on carbon steel.
 - Perform straight cutting operations on carbon steel.
 - Perform shape-cutting operations on carbon steel.
 - Pierce a hole through a carbon steel plate.

STANDARD 9 – Employment Skills

Score:

- Understand and use employment skills.
 - Build a job search network and find job leads.
 - Write a résumé and create a job portfolio.
 - Write a letter of application.
 - Complete a job application.
 - Participate in an actual or simulated job interview.
 - Work place ethics.

PERFORMANCE STANDARD AVERAGE SCORE: