

# Welding Technologies

## **Degree Type** Certificate

The Certificate in Welding, offered by Great Bay Community College, will provide graduates with the ability to meet the needs of entry and intermediate skill levels to acquire sustainable jobs in the field of welding. Upon completion of the program, students may be proficient in the use of welding equipment, setup, and operation for the five major processes; MIG, TIG, Stick, Oxy-fuel, and Plasma as well as many of the auxiliary processes such as; FCAW, Aluminum-TIG, Spool guns, etc. The curriculum will also provide students with a solid range of welding theory, blueprint reading, electricity, and fabrication techniques. Upon completion of the program, students will also be prepared for AWS Certification Testing. This program can be completed in 3 semesters.

## **Program Outcomes**

Graduates of the Welding Technologies certificate program will:

- Possess basic competency in the five major welding processes.
- Demonstrate proficiency in the use of welding equipment, set up, and operation for the five major processes: MIG, TIG, Stick, Oxy-fuel, and Plasma.
- Demonstrate basic concepts and practices of technical drawing and blueprint reading in accordance with industry standards.
- Articulate safety guidelines and use of machine tools.
- Refine skills to meet code requirements and specifications.
- Demonstrate knowledge of material strengths and weaknesses.
- Articulate industrial quality control procedures.
- Demonstrate fabrication techniques and cost estimation.

## **Health, Safety, and Internship Considerations**

This program includes work in a welding shop where high temperatures and explosive gases are used. Students will be taught industry standards for safety of themselves and others in the shop and will be expected to follow all safety procedures. Personal protective equipment must always be worn in the shop.

## **Admissions Criteria**

- Complete an application to the program.
- Provide proof of high school completion or equivalent.

## **Technical Standards**

This program includes work in a welding shop and requires participants to physically perform functions that require the following:

- Normal vision for reading instructions and for performing tasks (corrective vision is acceptable).
- Manual dexterity with both hands; good hand and eye coordination.
- No medical electronic implants such as pacemakers are allowed in the welding shop.

## **Transfer Credit Policy**

- Students with certificates in technical fields (in areas in which Great Bay does not offer a degree) may complete the Associate's Degree in Technical Studies.

- Students enrolled in the Welding Technology Certificate may elect to enroll in the Associate Degree in Technical Studies. Dual enrollment is contingent upon current matriculation or completion of the certificate. Completing the Welding Technology Certificate satisfies 18 credits towards the technical specialty core of the Technical Studies degree.

# Certificate Requirements

## Program Specific Requirements

### Technical Standards

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- No medical electronic implants such as pacemakers are allowed in the welding shop.

### Health and Safety Considerations

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### Admissions Criteria

- Complete an application to the program.
- Provide proof of high school completion or equivalent.

### Required Tool and Equipment List

The following equipment is required at an additional cost before the start of class. These items are available from multiple suppliers.

1. Safety toe high top leather work boots priced \$40-\$100+
2. Heavy quality cotton work jeans and long sleeve shirt (no manmade materials such as polyester, rayon, spandex, etc.)
3. Safety glasses with an ANSI rating of Z87 or higher (Z87+, Z87.1, Z87.2, etc) around \$10-15

The following Personal Protective Equipment is also required at additional cost. We recommend that you wait to meet with your instructor before purchasing the following:

1. TIG welding gloves from a welding supply store \$15-20
2. STICK welding gloves from the same store \$10-\$20
3. Shade 3-5 cutting glasses from the same store \$10-20
4. Shade 11-12 welding helmet same store \$40-\$100+
5. Welding sleeves or jacket either fire resistant or leather \$30-100+
6. Chipping Hammer \$10
7. Wire Brush \$5
8. Pliers \$15
9. Tip cleaners \$5

Item #	Title	Theory Hours	Lab Hours	Credits
WELD100G	Basic Welding Technologies	5	3	6
WELD150G	Intermediate Welding Technologies	3	6	6

WELD200G	Advanced Welding Technologies	3	6	6
<b>Sub-Total Credits</b>		<b>11</b>	<b>15</b>	<b>18</b>
<b>Total Credits</b>				<b>18</b>