

# George Stone Technical College



## Welding Technology

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Program Instructional Plan

2025-2026



# George Stone Technical College

## Instructional Plan

### **Mission Statement**

The mission of George Stone Technical College (GSTC) is to provide quality academic, career, and technical education opportunities for all learners through instruction that integrates rigor, relevance, and relationships.

### **Admission Requirements**

Applicants must be at least 16 years of age and capable of meeting the academic, physical, and emotional demands of their chosen program. Admission is open to all individuals regardless of gender, age, race, color, religion, national origin, disability, or marital status in accordance with the school's nondiscrimination policy.

Admission Process:

1. Complete an online application at [www.GeorgeStoneCollege.edu](http://www.GeorgeStoneCollege.edu).
2. Take the basic skills assessment, if applicable.
3. Meet with a school counselor for advisement.
4. Provide documentation of Florida residency for tuition purposes.
5. Fulfill any program-specific entry requirements.

A high school diploma or GED® is not required for enrollment in most programs but is recommended prior to completion.

### **Basic Skills Assessment**

All students entering a Career and Technical Education (CTE) program of 450 hours or more (except Law Enforcement) must take a state-mandated basic skills evaluation prior to enrollment, unless qualifying for an exemption.

Exemptions include:

- Associate's degree or higher
- Active duty U.S. military
- Standard Florida high school diploma (2007 or later)
- State-approved industry certification aligned to the program

Students not meeting required scores must participate in remediation and demonstrate progress prior to program completion.

### **Disability Accommodations**

In order to receive disability accommodations, students must self-disclose the disability to the counseling staff during the admissions process and provide documentation that clearly shows evidence of a disability. A school counselor will schedule a meeting with the student and the instructor to discuss the documented disability and applicable accommodations. Accommodations are based on individual needs and designed to ensure equal access to instruction, assessments, and facilities. Accommodations received in postsecondary education may differ from those received in secondary education and are reasonable as they relate to the industry or field. GSTC provides waivers to students with disabilities as defined in Section 1004.02(6) of the Florida Statutes to meet the career basic skills grade levels required for completion of career and technical programs as described in rule 6A-10.040(2).

A student with a documented disability, who is enrolled for remediation through adult education, and has completed 90% of the competencies of a career and technical program of study with a cumulative grade point average of at least 80% or higher, may petition to receive a waiver for the basic skills exit exam after attempting to pass it on at least two occasions. Waiver requests are available from a school counselor.

### **Tuition and Fees**

Tuition is established by the Florida Legislature and payable at the start of each enrollment period. All required tuition, lab, and registration fees must be paid prior to class attendance.

- Florida Residents pay in-state tuition rates.
- Non-residents pay out-of-state rates per state policy.
- Eligible high school and dual-enrolled students receive tuition waivers.

### **Attendance Policy**

GSTC emphasizes attendance as critical for developing professionalism and achieving success. Students are expected to attend all scheduled hours and participate fully.

Key Guidelines:

- Absence of six (6) consecutive days results in withdrawal.
- Attendance below 83% triggers probation and possible withdrawal.
- Leave of absence (minimum 10 days) requires administrative approval.
- Attendance is measured by presence only; no excused/unexcused distinction.

### **Plan of Instructional Practices**

Instruction includes lecture, demonstration, discussion, guided practice, simulation, cooperative education, and industry-based projects. Faculty adapt instruction to meet individual learning needs and employ competency-based strategies aligned with state frameworks.

Students use textbooks, digital tools, lab equipment, and simulation technologies reflecting current industry standards.

### **Evaluation and Grading**

Evaluation is based on mastery of occupational competencies, participation, professionalism, and assessments.

Grading Scale:

A (90–100), B (80–89), C (70–79), D (60–69), F (Below 60)

A minimum grade of 70% and satisfactory progress are required to maintain enrollment and aid eligibility.

### **Work-Based Learning Activities**

Work-based learning is an essential component of each program and bridges classroom instruction with real-world experience.

Examples include:

- In-school lab/shop projects
- Job shadowing with employers
- Cooperative education
- Externships or clinical rotations

Each activity follows a written instructional plan with objectives, competencies, and evaluation criteria.

### **Professional Conduct and Social Media**

Students are expected to maintain professionalism, respect, and ethical behavior consistent with industry standards. Inappropriate use of social media, including the posting of confidential or offensive content, may result in disciplinary action or dismissal.

### **Certification and Completion**

To receive a Certificate of Completion, students must:

1. Meet competencies per Florida Department of Education frameworks.
2. Satisfy attendance and grade requirements.
3. Fulfill all financial obligations.
4. Meet basic skills exit standards (if applicable).

### **Financial Aid**

Policies and guidelines for the administration of all financial aid are established according to federal and state law. Applicants complete an information form, Free Application for Federal Student Aid, and furnish documentation needed to verify eligibility. More

information on the application process may be obtained in the Financial Aid Office. The Financial Aid Office will assist students, where possible, with access to financial support offered by federal agencies (U.S. Department of Education – Pell Grants, Department of Veterans' Affairs), other state and local agencies and local organizations (scholarships).

Florida Department of Education  
Curriculum Framework

**Program Title:** Welding Technology  
**Program Type:** Career Preparatory  
**Career Cluster:** Manufacturing

Career Certificate Program	
Program Number	J400400
CIP Number	0648050805
Grade Level	30, 31
Program Length	1050 hours
Teacher Certification	Refer to the <b>Program Structure</b> section
CTSO	SkillsUSA
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.
CTE Program Resources	<a href="http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml">http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml</a>
Basic Skills Level	Computation (Mathematics): 9      Communications (Reading and Language Arts): 9

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the manufacturing career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the manufacturing career cluster. This program offers a broad foundation of knowledge and skills to prepare students for employment in the welding industry.

The content includes but is not limited to planning, management, technical and product skills, underlying principles of technology, labor issues, community issues and health, safety, and environmental issues.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Program Structure**

This program is a planned sequence of instruction consisting of three occupational completion points.

This program is comprised of courses which have been assigned course numbers in the SCNS (Statewide Course Numbering System) in accordance with Section 1007.24 (1), F.S. Career and Technical credit shall be awarded to the student on a transcript in accordance with Section 1001.44 (3)(b), F.S.

To teach the course(s) listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the postsecondary program structure:

OCP	Course Number	Course Title	Teacher Certification	Length
A	PMT0070	Welder Assistant 1	METAL WORK 7G WELDING @7 7G	150 hours
	PMT0071	Welder Assistant 2		150 hours
B	PMT0072	Welder, SMAW 1		150 hours
	PMT0073	Welder, SMAW 2		150 hours
C	PMT0074	Welder		450 hours

**National Standards**

Industry or National Standards corresponding to the standards and/or benchmarks for the Welding Technology program can be found using the following link: <https://www.aws.org/certification/page/home>

**Common Career Technical Core – Career Ready Practices**

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline, or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social, and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership, and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

## Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate an understanding and apply workplace safety and workplace organization skills.
- 02.0 Demonstrate basic knowledge of industrial and manufacturing processes.
- 03.0 Describe and identify metals and their properties accurately.
- 04.0 Demonstrate and apply basic knowledge of drawing and interpreting AWS welding symbols.
- 05.0 Apply basic oxy-fuel gas cutting principles and practices.
- 06.0 Create a product using basic oxy-fuel gas cutting principles and practices.
- 07.0 Apply intermediate oxy-fuel gas cutting principles and practices.
- 08.0 Demonstrate plasma arc cutting principles and practices.
- 09.0 Demonstrate a basic understanding of shielded metal arc welding (SMAW).
- 10.0 Create a product using basic shielded metal arc welding (SMAW) principles and practices.
- 11.0 Apply basic shielded metal arc welding (SMAW) skills.
- 12.0 Demonstrate and apply Carbon Arc Gouging (GAC) principles and practices.
- 13.0 Apply visual examination skills.
- 14.0 Create a product using Carbon Arc Gouging and basic shielded metal arc welding (SMAW) principles and practices.
- 15.0 Demonstrate an understanding of employability skills and career opportunities related to the welding industry.
- 16.0 Apply intermediate shielded metal arc welding (SMAW) skills.
- 17.0 Create a product using intermediate shielded metal arc welding (SMAW) principles and practices.
- 18.0 Apply basic gas metal arc welding (GMAW) skills.
- 19.0 Apply intermediate gas metal arc welding (GMAW) skills.
- 20.0 Apply basic flux-core arc welding (FCAW) skills.
- 21.0 Apply intermediate flux-core arc welding (FCAW) skills.
- 22.0 Apply basic gas tungsten arc welding (GTAW) skills.
- 23.0 Apply intermediate gas tungsten arc welding (GTAW) skills.
- 24.0 Demonstrate and apply basic pipe welding principles and practices.

Florida Department of Education  
 Student Performance Standards

**Program Title:** Welding Technology  
**Career Certificate Program Number:** J400400

**Course Description:** The Welder Assistant 1 course prepares students for entry into the welding industry. Students explore career opportunities and requirements of a professional welder. Content emphasizes beginning skills key to the success of working in the welding industry. Students study workplace safety and organization, basic manufacturing processes, metals identification, basic interpretation of welding symbols and oxyfuel gas cutting practices.

<b>Course Number: PMT0070</b>	
<b>Occupational Completion Point: A (1 of 2)</b>	
<b>Welder Assistant 1 – 150 Hours</b>	
01.0	Demonstrate an understanding and apply workplace safety and workplace organization. The student will be able to:
01.01	Locate and use Safety Data Sheets (SDS).
01.02	Demonstrate knowledge of first aid or first response procedures.
01.03	Identify safety procedures in case of smoke or chemical inhalation.
01.04	Demonstrate knowledge of material handling techniques to safely move materials.
01.05	Demonstrate the proper techniques for lifting.
01.06	Proactively respond to a safety concern and notify the instructor.
01.07	Demonstrate knowledge of emergency exits and signage.
01.08	Demonstrate knowledge of various emergency alarms and procedures
01.09	Perform emergency drills and participate in emergency teams.
01.10	Demonstrate knowledge of clean-up procedures.
01.11	Explain Lock Out/Tag Out requirements and procedures.
01.12	Demonstrate knowledge of machinery and equipment safety functions to determine if all safeguards are operational.
01.13	Identify procedures for handling hazardous material.
01.14	Develop safety checklists.
01.15	Determine the appropriate corrective action after an unsafe condition is identified.
01.16	Demonstrate knowledge of safety requirements for manual, electrical-powered and pneumatic tools.
01.17	Demonstrate knowledge of safety requirements for operation of automated machines.

01.18	Perform safety and environmental inspections.
01.19	Demonstrate skill in performing leak checks to determine if toxic or hazardous material is escaping from a piece of equipment.
01.20	Demonstrate knowledge of proper and safe installation techniques as described in manuals, checklists and regulations.
01.21	Demonstrate knowledge of equipment shutdown procedures.
01.22	Identify-safety related maintenance procedures.
01.23	Selecting and use of personal protective equipment (PPE) correctly.
01.24	Demonstrate knowledge of ergonomic impact of work techniques.
01.25	Demonstrate knowledge of and follow applicable safety laws, regulations and the environment (e.g., Occupational Safety and Health Administration (OSHA)).
01.26	Apply Occupational Safety Health Administration (OSHA) safety standards properly.
01.27	Research and identify class A, B, and C type fires.
01.28	Demonstrate and apply the proper procedures for extinguishing class A, B and C type fires.
01.29	Demonstrate knowledge of National Institute of Occupational Safety and Health (NIOSH), Environmental Protection Agency (EPA) and other regulatory agencies recommendations, guidelines and best practices.
01.30	Describe "Right-to-Know" Law as recorded in (29 CFR-1910.1200)
02.0	Demonstrate basic knowledge of industrial and manufacturing processes. The student will be able to:
02.01	Demonstrate knowledge of the use of current manufacturing processes as related to the welding industry.
02.02	Demonstrate an understanding of the importance and impact of routine maintenance of machines and equipment.
02.03	Understand the processes of separating, forming, conditioning, fabricating and finishing of materials.
02.04	Explain the difference between primary and secondary manufacturing processes.
03.0	Describe and identify metals and their properties accurately. The student will be able to:
03.01	Describe and understand the steel making process.
03.02	Describe and understand the differences between ferrous and nonferrous metals.
03.03	Describe and understand casting, alloys and forging.
03.04	Identify and understand metallurgical processes related to metals such as galvanized iron and steel, aluminum stainless steel, sheet metal, copper and brass.
03.05	Identify, understand and describe thermal properties of metals.
03.06	Identify and describe common gages, shapes and dimensions of metals.
04.0	Demonstrate and apply basic knowledge of drawing and interpreting AWS welding symbols. The student will be able to:

04.01	Interpret, understand and apply elements of a drawing or sketch.
04.02	Interpret, understand, and apply welding symbol information.
04.03	Design and create a drawing using welding symbology.
04.04	Identify a specified weld using a welding symbol.
04.05	Draw welding symbols using given variables.
04.06	Use and apply appropriate mathematical practices to the design and creation of drawings using welding symbols.
05.0	Apply basic oxy-fuel gas cutting principles and practices. The student will be able to:
05.01	Perform external inspections of equipment and accessories.
05.02	Make minor repairs to equipment and accessories.
05.03	Set up manual OFC operations for plain carbon steel.
05.04	Operate manual oxyfuel cutting equipment.
05.05	Perform straight cutting operations using manual oxyfuel cutting process on plain carbon steel.
06.0	Create a product using basic oxy-fuel gas cutting principles and practices. The student will be able to:
06.01	Design and create a basic work of art or project utilizing material and skills developed.
06.02	Produce a product using drawings with tolerances and specifications.
06.03	Create and deliver a presentation to communicate project results.

**Course Description:** The Welder Assistant 2 course is designed to build on the skills and knowledge students learned in Welder Assistant 1 for entry into the welding industry. Students explore career opportunities and requirements of a professional welder. Content emphasizes beginning skills key to the success of working in the welding industry. Students study drawings and welding symbols, intermediate oxyfuel gas cutting practices, plasma arc cutting principles and basic shielded metal arc welding (SMAW).

**Course Number: PMT0071**  
**Occupational Completion Point: A (2 of 2)**  
**Welder Assistant 2 – 150 Hours**

07.0	Apply intermediate oxy-fuel gas cutting principles and practices. The student will be able to:
07.01	Apply intermediate manual oxy-fuel gas cutting skills.
07.02	Perform shape cutting operations on plain carbon steel.
07.03	Perform bevel cutting operations on plain carbon steel.
07.04	Remove weld metal on plain carbon steel using weld washing techniques.

07.05	Apply machine oxy-fuel gas cutting (track burner) skills.
07.06	Perform safety inspections of equipment and accessories.
07.07	Make minor external repairs to equipment and accessories.
07.08	Set up for plain carbon steel machine OFC (track burner) operations.
07.09	Operate machine oxy-fuel gas cutting (track burner) equipment.
07.10	Perform straight cutting operations on plain carbon steel.
08.0	Demonstrate plasma arc cutting principles and practices. The student will be able to:
08.01	Perform safety inspections of equipment and accessories.
08.02	Make minor external repairs to equipment and accessories.
08.03	Perform metal removal operations.
08.04	Make minor repairs to equipment and accessories.
08.05	Set up for using plasma arc cutting operations.
08.06	Operate manual plasma arc cutting equipment.
08.07	Perform shape cutting operations using plasma arc cutting process.
09.0	Demonstrate a basic understanding of shielded metal arc welding (SMAW). The student will be able to:
09.01	Perform external inspections of SMAW equipment and accessories.
09.02	Make minor repairs to SMAW equipment and accessories.
09.03	Set up shielded metal arc welding operations on plain carbon steel.
09.04	Operate shielded metal arc welding equipment.
09.05	Make pad welds, all positions, on plain carbon steel.
10.0	Create a product using oxy-fuel gas cutting and introductory shielded metal arc welding (SMAW) principles and practices. The student will be able to:
10.01	Design and create a work of art or project utilizing material and skills learned.
10.02	Create a working drawing or blueprint using welding symbols.
10.03	Design a product from a working drawing or blueprint created.
10.04	Fabricate a product using the skills learned related to oxy-fuel gas cutting and introductory shielded metal arc welding (SMAW).
10.05	Create and deliver a presentation to communicate project results.

**Course Description:** The Welder SMAW 1 course prepares students for entry into the welding industry as a basic Shielded Metal Arc Welder. Students explore career opportunities and requirements of a professional welder. Content emphasizes beginning skills key to the success of working in the welding industry. Students study basic shielded metal arc welding (SMAW), Carbon Arc Gouging (GAC) principles, and visual examination skills.

<b>Course Number: PMT0072</b>	
<b>Occupational Completion Point: B (1 of 2)</b>	
<b>Welder, SMAW 1 – 150 Hours</b>	
11.0	Demonstrate and apply basic shielded metal arc welding (SMAW) skills. The student will be able to:
11.01	Perform external inspections of SMAW equipment and accessories.
11.02	Make minor repairs to SMAW equipment and accessories.
11.03	Set up shielded metal arc welding operations on plain carbon steel.
11.04	Operate shielded metal arc welding equipment.
11.05	Make pad welds, all positions, on plain carbon steel.
11.06	Make fillet welds, all positions, on plain carbon steel.
11.07	Make groove welds, all positions, on plain carbon steel.
12.0	Demonstrate and apply Carbon Arc Gouging (GAC) principles and practices. The student will be able to:
12.01	Perform safety inspections of equipment and accessories.
12.02	Repair unacceptable weld profiles.
12.03	Properly set up equipment, accessories, and machine for Carbon Arc Gouging (GAC)
12.04	Apply Manual Air (Carbon Arc Gouging) and Cutting (CAC-A) skills.
12.05	Set up manual air carbon arc gouging and cutting operations.
12.06	Operate manual air carbon arc cutting equipment.
12.07	Apply manual Arc Gouging and Arc Cutting (AC) skills.
13.0	Apply visual examination skills. The student will be able to:
13.01	Examine cut surfaces and edges of prepared base metal parts.
13.02	Examine tack, intermediate pass and cover pass.
14.0	Create a product using Carbon Arc Gouging and basic shielded metal arc welding (SMAW) principles and practices. The student will be able to:
14.01	Design and create a work of art or project utilizing material and skills learned.

14.02	Create a working drawing or blueprint using welding symbols.
14.03	Design a product from a working drawing or blueprint created.
14.04	Fabricate a product using the skills learned related to Carbon Arc Gouging and basic shielded metal arc welding (SMAW).
14.05	Create and deliver a presentation to communicate project results.

**Course Description:** The Welder SMAW 2 course is designed to build on the skills and knowledge students learned in Welder SMAW 1 for entry into the welding industry as a basic Shielded Metal Arc Welder. Students explore career opportunities and requirements of a professional welder. Content emphasizes beginning skills key to the success of working in the welding industry. Students study employability and welding careers, and intermediate shielded metal arc welding (SMAW).

<b>Course Number: PMT0073</b>	
<b>Occupational Completion Point: B (2 of 2)</b>	
<b>Welder, SMAW 2 – 150 Hours</b>	
15.0	Demonstrate an understanding of employability skills and career opportunities related to the welding industry. The student will be able to:
15.01	Demonstrate knowledge of good workplace behavior and how to address improper workplace behavior.
15.02	Discuss motivation and human behavior.
15.03	Develop a personal stress management plan.
15.04	Demonstrate knowledge of ways to improve reading, listening and writing skills.
15.05	Demonstrate knowledge of techniques for making effective presentations.
15.06	Use different forms of technology communication.
15.07	Provide effective feedback and make suggestions.
15.08	Demonstrate appropriate customer service skills and techniques.
15.09	Demonstrate knowledge of roles and responsibilities of team members.
15.10	Align team goals (that are specific, documented, measurable and achievable) to customer and business production needs.
15.11	Effectively communicate production and process information.
15.12	Develop personal career plan that includes goals, objectives, and strategies.
15.13	Examine licensing, certification, and industry credentialing requirements.
15.14	Evaluate and compare employment opportunities that match career goals.
15.15	Identify and exhibit traits for retaining employment.

15.16	Identify opportunities and research requirements for career advancement.
15.17	Research the benefits of ongoing professional development.
15.18	Examine and describe entrepreneurship opportunities as a career planning option.
16.0	Apply intermediate shielded metal arc welding (SMAW) skills. The student will be able to:
16.01	Make single “V” groove welds, all positions (visual inspection criteria, using current and applicable welding industry codes) on plain carbon steel with backing.
16.02	Perform 1G - 4G limited thickness qualification (bend) tests on plain carbon steel plate (using current and applicable welding industry codes).
16.03	Perform destructive root and face bend specimens (using current and applicable welding industry codes).
16.04	Determine and understand WPS and PQR.
17.0	Create a product using intermediate shielded metal arc welding (SMAW) principles and practices. The student will be able to:
17.01	Design and create a work of art or project utilizing material and skills learned.
17.02	Create a working drawing or blueprint using welding symbols learned.
17.03	Design a product from a working drawing or blueprint created.
17.04	Fabricate a product using the skills learned related to intermediate shielded metal arc welding (SMAW).
17.05	Repair products of ferrous and non-ferrous metals.
17.06	Create and deliver a presentation to communicate project results.

**Course Description:** The Welder course builds on the skills and knowledge students learned in the Welder Assistant and Welder SMAW courses. Students explore career opportunities and requirements of a professional welder. Content emphasizes skills key to the success of working in the welding industry. Students study basic and intermediate Gas Metal Arc Welding (GMAW), basic and intermediate Flux-Core Arc Welding (FCAW), basic and intermediate Gas Tungsten Arc Welding (GTAW), and a basic understanding of pipe welding.

<b>Course Number: PMT0074</b>	
<b>Occupational Completion Point: C</b>	
<b>Welder – 450 Hours</b>	
18.0	Apply basic gas metal arc welding (GMAW) skills. The student will be able to:
18.01	Perform external inspections of GMAW equipment and accessories.
18.02	Make minor repairs to GMAW equipment and accessories.
18.03	Set up gas metal arc welding operations for plain carbon steel.
18.04	Operate gas metal arc welding equipment.

18.05	Make short-circuiting transfer fillet welds, all positions, on plain carbon steel.
18.06	Make Pad welds, all positions, on plain carbon steel.
19.0	Apply intermediate gas metal arc welding (GMAW) skills. The student will be able to:
19.01	Make Fillet Spray transfer welds, in flat and horizontal positions, on plain carbon steel.
19.02	Make 1G Groove Spray transfer welds on plain carbon steel.
19.03	Set up (GMAW) gas metal arc welding equipment for aluminum, stainless steel.
19.04	Make groove welds 1G Groove position on aluminum.
19.05	Make fillet welds 1F position on stainless.
19.06	Make groove welds 1G position on stainless.
20.0	Apply basic flux-cored arc welding (FCAW) skills. The student will be able to:
20.01	Perform safety inspections of equipment and accessories.
20.02	Make minor repairs to equipment and accessories.
20.03	Set up for plain carbon steel FCAW operations.
20.04	Operate flux cored arc welding equipment, gas shielded process.
20.05	Make Pad welds, all positions, on plain carbon steel.
21.0	Apply Intermediate flux-core arc welding (FCAW) skills. The student will be able to:
21.01	Make fillet welds and groove welds in all positions on plain carbon steel.
21.02	Operate flux core arc welding equipment, gas-shielded process, to make fillet welds, all positions, on plain carbon steel.
21.03	Operate flux core arc welding equipment to make groove welds all positions, on plain carbon steel.
22.0	Apply basic gas tungsten arc welding (GTAW) skills. The student will be able to:
22.01	Perform external inspections of GTAW equipment and accessories.
22.02	Make minor repairs to GTAW equipment and accessories.
22.03	Set up for plain carbon steel, aluminum, and stainless steel GTAW operations.
22.04	Operate gas tungsten arc welding equipment.
22.05	Make fillet welds, all position, on plain carbon steel.
23.0	Apply intermediate gas tungsten arc welding (GTAW) skills. The student will be able to:
23.01	Make 1G - 2G Groove welds on plain carbon steel.

23.02	Make 1F - 3F Fillet welds on aluminum.
23.03	Make 1G Groove welds on aluminum.
23.04	Make 1F - 3F Fillet welds on stainless steel.
23.05	Make 1G - 2G Groove welds on stainless steel.
24.0	Demonstrate and understanding of pipe welding principles and practices. The student will be able to:
24.01	Research and understand employability opportunities associated with advanced welding skills such as careers in pipe welding.
24.02	Set up welding equipment for shielded metal arc welding (SMAW) processes for pipe welding on carbon steel pipe.
24.03	Tack and weld carbon steel in the 1G position.

## Additional Information

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools, and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate, and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### **Career and Technical Student Organization (CTSO)**

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Cooperative Training – OJT**

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

### **Basic Skills**

In Career Certificate Programs offered for 450 hours or more, in accordance with Rule 6A-10.040, F.A.C., the minimum basic skills grade levels required for postsecondary adult career and technical students to complete this program are: Computation (Mathematics) and Communications (Reading and Language Arts). These grade level numbers correspond to a grade equivalent score obtained on a state designated basic skills examination.

Adult students with disabilities, as defined in Section 1004.02, Florida Statutes, may be exempted from meeting the Basic Skills requirements (Rule 6A-10.040). Students served in exceptional student education (except gifted) as defined in s. 1003.01, F.S., may also be exempted from meeting the Basic Skills requirement. Each school district and Florida College System Institution must adopt a policy addressing procedures for exempting eligible students with disabilities from the Basic Skills requirement as permitted in Section 1004.91, F.S.

### **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Note: postsecondary curriculum and regulated secondary programs cannot be modified.