Program of Study: Welding

This Program of Study may serve as a graduation guide for the next four plus years, along with other career planning and educational materials. Courses listed in this model may include recommended coursework and should be individualized to students' educational and career goals. Each graduation plan needs to meet minimum high school graduation requirements. Dual Enrollment courses can be high school academic and/or career technical education courses.

Secondary: Welding						Postsecondary:			
Course/Grade	**9**	**10**	**11**	**12**		**TCC**	**Diploma or AAS**		**Bachelor of Science**
English 4 credits	9th Grade Lit	10th Grade Lit	American Lit	British Lit		**Any Combination of the Following TCCs:** • MGM1 - DE Gas Metal Arc Welder • MF61 - DE Flux Cored Arc Welder • MB31 - Basic Shielded Arc Welder • GM31 - Gas Metal Arc Welder • GTA1 - Gas Tungsten Arc Welder • MGT1 - Dual Enrollment Gas Tungsten Arc Welder • FC61 - Flux Cored Arc Welder • FS31 - Basic Shielded Metal Arc Welder	Any completed TCC identified in the TCC column leads to WAJ2 Welding and Joining Technology diploma. For more information on technical college programs, visit https://kms.tcsg.edu/POA	Entrance or Exit Point	The University System of Georgia offers students' higher education options at 30 institutions throughout the state, providing a wide range of academic programming including certificates and associate, baccalaureate, masters, doctoral and professional degrees. For more information on college and university programs, visit apps.ds.usg.edu
Math 4 credits	Algebra I	Geometry	Algebra II	Fourth Math Selection					
Science 4 credits	Environmental Science	Physical Science	Biology	Fourth Science Selection					
Social Studies 3 credits	World History	US History	Economics and Government						
PE 1 credit	Health and Personal Fitness		Consult your counselor for course progression. Course progression on this sheet is based on general guidelines.						
Pathway 3 credits	**Industry Fundamentals and Occ Safety**	**Introduction to Metals**	**Welding I**	See CTAE Related Electives Below					
Electives	**World Language Sequence** French or Spanish *2 Units Required for admission to Georgia University System Colleges*		**Fine Arts** Visual Arts Band Chorus Drama	Advanced Placement Courses Dual Enrollment Courses					
	Related Electives Welding II Basic Agriculture Forestry Science		**Work-Based Learning** Internship Cooperative Education Youth Apprenticeship						

NOTE: Students have many options to ENTER and EXIT from their academic studies into the workforce. When a student graduates from high school, they are eligible to choose one of many ENTRANCE POINT options: 1. Enroll in either a 2- or 4-year post-secondary program; 2. Enroll in an apprenticeship program or the military; or 3. Enter the workforce using technical skills learned in high school. When a student finishes a 2- or 4-year degree program, they may choose to EXIT and 1. Enroll in an apprenticeship program or the military; 2. Enroll in a professional university degree program; or 3. Enter the workforce using technical skills learned.

Welding Career Pathway Completers - Industry Credentialing for High School Students

Upon completion of sequenced courses in the Welding Career Pathway, students are eligible to complete the Industry-Recognized student credential for fulfillment of the End of Pathway Assessment. Secondary students completing the Welding pathway will be able to sit for the National Industry Credentialed assessment offered on-line from NCCER or NOCTI. Once mastery is reached, students will receive recognition for completion and use this credential in conjunction with their job or continuing training.

Sample High Demand Careers in Georgia				
Occupation Specialties	**Level of Education Needed**	**Georgia Average Salary**	**Annual Average Openings**	**2014-2024 Employment Outlook**
Welders, Cutters & Welder Fitters	Postsecondary Certificate	$36,175	371	In Demand, High Skill
Sheet Metal Workers	Postsecondary Certificate	$43,460	142	In Demand, High Skill
Structural Iron & Steel Workers	High School Diploma	$38,523	33	In Demand, High Skill

GDOL Labor Market Explorer

Go to GAfutures at www.gafutures.org for more information about your education and career planning, including valuable financial information (grants and scholarships including HOPE Program, grants and loans, FAFSA, and CSS forms).

Career Enhancement Opportunities

Career-Related Education Activities

- Career Awareness
- Career Exploration
- Instructional Related
- Connecting
- Work-Based Learning

Postsecondary Options:

- 4-Year Universities/ Colleges
- 2-Year Colleges
- Technical Colleges
- State Registered Apprenticeships
- Special Purpose Schools
- On-the-Job Training
- Military

Earning Postsecondary Credits While in High School

A vital way to get ahead and realize you can pass college courses is by earning postsecondary credits as a high school student. Georgia offers a dual credit program titled Dual Enrollment. You need to talk with your parents, school counselor, or advisor about the proper courses to take each year in high school and dual credit.
Students completing the course work in this Plan, will have earned/completed an Industry Credential, Technical Certificate of Credit (TCC), Associates of Applied Science Degree, and/or Bachelor's Degree.

Postsecondary Transition

- Students who will continue their education in a Program of Study at one of the University System of Georgia institutions should prepare to take the ACT or SAT for admissions. Tests for admissions may vary from institution to institution. Contact the selected institution for specific testing information. Additional admissions information can be found at Staying On Course.(https://www.usg.edu/assets/student_affairs/documents/Staying_on_Course.pdf)
- Students who will continue their education in a Program of Study at one of the Technical College System of Georgia institutions should prepare to complete a placement exam.
- Students who will continue their education and training in the US Military should take the ASVAB assessment.
- Students should utilize electronic college and career databases to select the most appropriate postsecondary opportunities to match their selected career field, including registered apprenticeships.
- Georgia's dual-credit programs have been combined into one program entitled Dual Enrollment, in which high school students may earn their high school course credits while taking college courses.

Related Pathway Occupations	Other Related Occupations
• Welders, Cutters, & Welder Fitters	• Sheet Metal Workers
• Assemblers & Fabricators	• Boilermakers
• Boilermakers	• Plumbers
• Layout Workers, Metal & Plastic	• Electricians
• Pipe Fitters & Steamfitters	• Machinists
• Reinforcing Iron & Rebar Workers	• Carpenters
• Structural & Steel Workers	• Stone Masons
• Tool & Die Workers	
	ONET Online

Welding
Pathway Description

Construction is one of the nation's largest industries with over 7 million wage and salary jobs and 1.9 million self-employed workers. Construction includes the building of new structures as well as additions and modifications to existing ones. The construction industry also includes maintenance, repair and improvements on these structures.

Welders and solderers use heat to permanently join pieces of metal. Because of its strength, welding is important to the manufacture of ships, automobiles, and aircraft. In addition, welders work in the construction industry, joining beams in buildings and other structures. Solderers use similar processes on electronic and other small equipment. The outlook for welders and solderers varies by industry.

Workers are required to complete extensive on-the-job-training, apprenticeships, and/or technical college programs. Employment of welders, cutters, solderers, and brazers is expected to grow 15 percent from 2010 to 2020, about as fast as the average for all occupations. This employment growth reflects the need for welders in manufacturing because of the importance of welding as part of the manufacturing process. Welders can easily move from one industry to another because basic welding skills are the same across industries. Welders who work in the automotive manufacturing industry can find work in the oil and gas industry. Growth in the defense industry as well as the need to rebuild bridges, highways and aging building will contribute to employment growth.

Overall job prospects will vary by skill level. Job prospects should be good for welders trained in the latest technologies. Welding schools report that graduates have little difficulty finding work, but many welding employers report difficulty finding properly skilled welders. However, welders who do not have up-to-date training may face competition for jobs. For all welders, job prospects should be better for those willing to relocate.

Student Organization: SkillsUSA	**Programs of Study Developed in Partnership**: the Georgia Department of Education, the Technical College System of Georgia, and the University System of Georgia. #CTAEDelivers