

<p style="text-align: center;"><b>Welding I</b> <b>TEKS/LINKS – Student Objectives</b> <b>Two Credits</b></p>	<p style="text-align: center;"><b>Suggested Time Ranges</b></p>
<p><b>First Six Weeks</b></p>	
<p><b>Introduction</b> Weld I 1(A) The student will express ideas to others in a clear, concise, and effective manner through written and verbal communication. Weld I 1(B) The student will convey written information that is easily understandable to others. Weld I 1(C) The student will demonstrate acceptable work ethics in reporting for duty and performing assigned tasks as directed. Weld I 1(D) The student will conduct oneself in a manner acceptable for the profession and work site such as suitable dress and polite speech. Weld I 1(E) The student will choose the ethical course of action and comply with all applicable rules, laws, and regulations. Weld I 1(F) The student will review the fine, detailed aspects of both quantitative and qualitative work process and end products.</p>	<p style="text-align: center;">8 days</p>
<p><b>Employer Expectations</b> Weld I 1(G) The student will evaluate systems and operations; identify causes, problems, patterns, or issues; and explore workable solutions or remedies to improve situations. Weld I 1(H) The student will follow written and oral instructions and adhere to established business practices, policies, and procedures, including health and safety rules. Weld I 1(I) The student will prioritize tasks, follow schedules, and work on goal-relevant activities in a way that uses time wisely in an effective, efficient manner. NCCER/AWS review certification requirements.</p>	<p style="text-align: center;">2 days</p>
<p><b>Career</b> Weld I 2(A) The student will explore academic knowledge and skills required for postsecondary education. Weld I 2(B) The student will identify employers' expectations to foster positive customer satisfaction. Weld I 2(C) The student will demonstrate the professional standards required in the workplace such as interviewing skills, flexibility, willingness to learn new skills and acquire knowledge, self-discipline, self-worth, positive attitude, and integrity in a work situation. Weld I 2(D) The student will evaluate personal career goals. Weld I 2(E) The student will communicate effectively with others in the workplace to clarify objectives. Weld I 2(F) NCCER The student will demonstrate skills related to health and safety in the workplace, as specified by appropriate</p>	<p style="text-align: center;">5 days</p>

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government regulations.	
<p><b>Calculating Cost</b> Weld I 3(A) The student will demonstrate effective communication skills with individuals from varied cultures such as fellow workers, management, and customers. Weld I 3(B) The student will demonstrate mathematical skills to estimate costs. Weld I 3(C) The student will demonstrate technical writing skills related to work orders.</p>	3 days
<p><b>Measuring</b> Weld I 3(D) The student will apply accurate readings of measuring devices. Weld I 3(E) The student will accurately use an appropriate tool to make measurements. Weld I 3(F) The student will compute measurements such as area, surface area, volume, and perimeter.</p>	9 days
<p>Weld I 3(G) The student will solve problems using whole numbers, fractions, mixed numbers, and decimals. Weld I 3(H) The student will use various methods, including a calculator, to perform computations. Weld I 3(I) The student will perform conversions between fractions and decimals. Weld I 3(J) The student will perform conversions between standards units and metric units. Weld I 3(K) The student will calculate and apply the functions of angles such as using the Pythagorean Theorem. Weld I 3(M) The student will diagram the parts of a circle.</p>	1 day
<p><b>Second Six Weeks</b></p>	
<p><b>Safety</b> Weld I 4(A) NCCER The student will operate welding equipment according to safety standards. Weld I 4(B) NCCER The student will identify and properly dispose of environmentally hazardous materials used in welding. Weld I 4(C) The student will explain the importance of recycling materials used in welding. Weld I 4(D) The student will choose appropriate personal protective equipment. Weld I 4(E) The student will evaluate skills related to health and safety in the workplace as specified by appropriate governmental regulation.</p>	10 days ongoing

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<p><b>Welding Symbols</b> Weld I 5(A) AWS The student will demonstrate knowledge of engineering drawings, charts, and diagrams. Weld I 5(B) The student will interpret orthographic and isometric views of three-dimensional figures. Weld I 5(C) The student will interpret engineering, drawings, charts, and diagrams. Weld I 5(D) AWS The student will analyze components of the welding symbol. Weld I 5(E) The student will identify types of welding joints. Weld I 5(F) The student will analyze positions of welding. Weld I 5(G) The student will identify types of welding is such as fillet, groove, spot, plug, and flanged.</p>	<p style="text-align: center;">15 days</p>
<p><b>Third Six Weeks</b></p>	
<p><b>Welding Inspection</b> Weld I 6(A) AWS The student will explain weld inspection processes. Weld I 6(B) The student will interpret welding codes.</p>	<p style="text-align: center;">3 days</p>
<p><b>Gas Safety</b> Weld I 7(A) The student will practice safe operating practices. Weld I 7(B) The student will perform safe handling of compressed gases.</p>	<p style="text-align: center;">3 days ongoing</p>
<p><b>Oxy-Fuel</b> Weld I 7(C) AWS The student will identify components of oxy-fuel gas cutting system. Weld I 7(D) The student will demonstrate proper set-up procedures for oxy-fuel cutting process. Weld I 7(E) The student will identify factors affecting oxy-fuel cutting base metals. Weld I 7(F) The student will demonstrate proper cutting techniques such as piercing, straight line, and bevel. Weld I 7(G) The student will identify acceptable cuts. Weld I 7(H) The student will evaluate alternative fuel gasses such as propane, propylene, and Chemtane 2®</p>	<p style="text-align: center;">9 days</p>
<p><b>Safety – Plasma Arc</b> Weld I 8(A) The student will use safe operating practices. Weld I 8(B) The student will demonstrate knowledge of the theories of plasma arc cutting.</p>	<p style="text-align: center;">2 days ongoing</p>
<p><b>Plasma Cutting</b> Weld I 8(C) The student will apply safe handling of compressed air supply.</p>	<p style="text-align: center;">8 days</p>

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<p>Weld I 8(D) AWS The student will identify components of plasma arc cutting.</p> <p>Weld I 8(E) The student will demonstrate correct set-up procedure for plasma arc cutting.</p> <p>Weld I 8(F) The student will define cutting terms.</p> <p>Weld I 8(G) The student will perform straight line, piercing, bevels, and shape cuts.</p>	
<p><b>Fourth Six Weeks</b></p>	
<p><b>Safety</b> Weld I 9(A) The student will use safe operating practices.</p>	<p style="text-align: center;">2 days ongoing</p>
<p><b>Metal Arc</b> Weld I 9(B) The student will analyze welding current relationships such as alternating current and direct current, heat transfer, and polarity.</p> <p>Weld I 9(C) AWS The student will apply shielded metal arc welding principles.</p> <p>Weld I 9(D) The student will demonstrate proper set-up procedure for shielded metal arc welding.</p>	<p style="text-align: center;">10 days</p>
<p><b>Metal Welding</b> Weld I 9(E) The student will explain the American Welding Society (AWS) identification system for shielded metal arc welding electrodes.</p> <p>Weld I 9(F) AWS The student will determine appropriate electrodes for base metal in shielded metal arc welding.</p> <p>Weld I 9(G) The student will perform multi-pass groove welds in all positions to the AWS Schools Excelling through National Skills Education standards.</p>	<p style="text-align: center;">20 days</p>
<p><b>Fifth Six Weeks</b></p>	
<p><b>Safety</b> Weld I 10(A) The student will use safe operating practices NCCER use safe operating practices.</p>	<p style="text-align: center;">3 days ongoing</p>
<p><b>Gas Metal</b> Weld I 10(B) The student will explain the effects that weld angle, work angle, and electrode extension have on welds.</p> <p>Weld I 10(C) The student will apply gas metal arc welding principles.</p> <p>Weld I 10(D) The student will demonstrate proper set-up procedure for gas metal arc welding.</p> <p>Weld I 10(E) The student will explain the AWS identification system for flux cored arc welding electrodes.</p>	<p style="text-align: center;">15 days</p>

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<p>Weld I 10(F) The student will determine appropriate filler metal for base metal in gas metal arc welding. Weld I 10(G) The student will perform fillet and groove welds in all positions.</p>	
<p><b>Flux</b> Weld I 11(B) The student will explain the effects that weld angle, work angle, and electrode extension have on welds. Weld I 11(C) AWS The student will apply flux cored arc welding principles. Weld I 11(D) The student will demonstrate proper set-up procedure for flux cored arc welding.</p>	<p style="text-align: center;">15 days</p>
<p><b>Sixth Six Weeks</b></p>	
<p><b>Flux</b> Weld I 11(E) The student will explain the AWS identification system for flux cored arc welding electrodes. Weld I 11(F) The student will determine appropriate filler metal for base metal in flux cored arc welding. Weld I 11(G) The student will perform fillet and groove welds in all positions.</p>	<p style="text-align: center;">12 days</p>
<p><b>Safety</b> Weld I 12(A) NCCER/AWS The student will use safe operating practices.</p>	<p style="text-align: center;">3 days ongoing</p>
<p><b>Weld Is</b> Weld I 12(B) The student will analyze electrical welding current relationships such as alternating current and direct current, heat transfer, and polarity. Weld I 12(C) The student will identify the common types of tungsten and filler metals according to the AWS identification system. Weld I 12(D) The student will demonstrate proper set-up procedure for gas tungsten arc welding. Weld I 12(E) The student will perform fillet and groove welds in all positions. Weld I 12(F) The student will perform welds on metals such as carbon steel, stainless steel, and aluminum.</p>	<p style="text-align: center;">18 days</p>

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