

<b>Iowa SENSE Aligned Welding Curriculum</b>	
<b><u>General Course Info</u></b>	
<b>Course Number :</b>	251
<b>Discipline:</b>	WEL – Welding
<b>Course Title:</b>	Gas Tungsten Arc Welding (GTAW) for Carbon Steel: SENSE1
<b>Short Title:</b>	GTAW Carbon Steel: SENSE1
<b>Course Description:</b>	Focuses on proper weld safety, machine setup and welding techniques for Gas Tungsten Arc Welding. Students perform American Welding Society compliant welds on carbon steel in flat, horizontal, vertical and overhead positions. This course will prepare students to take an AWS welder certification test, which is recommended for successful completion of this course. This course aligns to SENSE Level 1, Module 7 – Key Indicators 1-7, as well as Module 2 - Key Indicator 7, Module 3- Key Indicator 3, and Module 9 – Key Indicator 2.
<b>Credit Hours:</b>	2
<b>Pre/ Co-requisites:</b>	WEL 228 is a pre or co-requisite.
<b><u>Course Competencies</u></b>	
<b>Course Competencies:</b>	<ol style="list-style-type: none"> <li>1. Evaluate GTAW equipment, accessories and consumables to ensure proper safety and operations</li> <li>2. Produce fillet welds in all positions on carbon steel</li> <li>3. Produce groove welds in all positions on carbon steel</li> <li>4. Evaluate welds to ensure AWS D.1.1 standards are met</li> </ol>
<b>Course Sub-Competencies:</b>	<ol style="list-style-type: none"> <li>1.1 Understand GTAW technology</li> <li>1.2 Discuss GTAW application techniques</li> <li>1.3 Perform safety inspections</li> <li>1.4 Complete minor external repairs to GMAW equipment</li> <li>1.5 Set up GTAW equipment per WPS for welding on carbon steel</li> <li>2.1 Complete a fillet weld in the flat position</li> <li>2.2 Complete a fillet weld in the horizontal position</li> <li>2.3 Complete a fillet weld in the vertical position</li> <li>2.4 Complete a fillet weld in the overhead position</li> <li>3.1 Complete a groove weld in the flat position</li> <li>3.2 Complete a groove weld in the horizontal position</li> <li>3.3 Complete a groove weld in the vertical position</li> <li>3.4 Complete a groove weld in the overhead position</li> <li>4.1 Analyze completed welds</li> <li>4.2 Adjust welding technique</li> </ol>
<b><u>Assessment of Student Learning</u></b>	
<b>SENSE Assessment:</b>	<ol style="list-style-type: none"> <li>1. Minimum score of 100% on the written safety test for SENSE I, Module 2: Safety and Health of Welders, based on ANSI Z49.1: <i>Safety in Welding, Cutting, and Allied Processes</i>.</li> <li>2. Minimum score of 75% on the written GTAW test, based on relevant sections of AWS C5.5/C5.5M.</li> <li>3. Passes instructor’s visual inspection of welding tests.</li> </ol>
<b>Recommended 3rd Party Certification:</b>	AWS D.1.1

This workforce solution is funded by the I-AM Consortium which is 100% financed through a \$12,951,165 grant from the Department of Labor’s Employment & Training Administration. The product was created by the grantee and does not necessarily reflect the official position of the U.S. Department of Labor. The Department of Labor makes no guarantees, warranties, or assurances of any kind, express or implied, with respect to such information, including any information on linked sites and including, but not limited to, accuracy of the information or its completeness, timeliness, usefulness, adequacy, continued availability, or ownership

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