

Iowa SENSE Aligned Welding Curriculum

General Course Info

Course Number:	WEL 263
Discipline:	WEL – Welding
Course Title:	Thermal Cutting Processes II - Plasma and Carbon Steel Arc: SENSE 1
Short Title:	PAC/CAC: SENSE 1
Course Description:	Focuses on proper safety, equipment setup and cutting techniques for Plasma and Carbon steel Arc cutting on carbon steel, austenitic stainless steel, and aluminum. Students perform American Welding Society compliant cutting operations in the flat position. The student will also perform scarfing and gouging operations to remove base and weld metal in flat and horizontal positions. This course aligns to SENSE Level 1 Module 8 - Units 3 and 4, as well as Module 2 - Key Indicator 7 and Module 9 – Key Indicator 1.
Credit Hours:	2
Pre/ Co-requisites:	WEL 228 is a pre or co-requisite.

Course Competencies

Course Competencies:	<ol style="list-style-type: none">1. Evaluate cutting equipment, accessories and consumables to ensure proper safety and operations2. Produce manual plasma arc cuts on carbon steel3. Perform scarfing and gouging operations to remove base and weld metal on carbon steel4. Evaluate cuts to ensure AWS D.1.1 standards are met
Course Sub-Competencies:	<ol style="list-style-type: none">1.1 Perform safety inspections1.2 Complete minor external repairs to oxyfuel cutting equipment1.3 Set up manual plasma arc equipment for cutting carbon steel1.4 Set up manual plasma arc equipment for cutting aluminum1.5 Set up manual plasma arc equipment for cutting austenitic stainless steel1.6 Set up manual air carbon arc equipment for cutting carbon steel2.1 Complete straight, square edge cutting operations in the flat position on carbon steel with PAC equipment2.2. Complete straight, square edge cutting operations in the flat position on aluminum with PAC equipment2.3 Complete straight, square edge cutting operations in the flat position on austenitic stainless steel with PAC equipment2.4 Complete shape, square edge cutting operations in the flat position on carbon steel with PAC equipment2.5 Complete shape, square edge cutting operations in the flat position on aluminum with PAC equipment2.6 Complete shape, square edge cutting operations in the flat position on austenitic stainless steel with PAC equipment3.1 Remove base metal in the flat position with CAC-A equipment3.2 Remove base metal in the horizontal position with CAC-A equipment3.3 Remove weld metal in the flat position with CAC-A equipment3.4. Remove weld metal in the horizontal position with CAC-A equipment4.1 Analyze completed cuts4.2 Adjust cutting technique4.3 Analyze completed scarfing and gouging results4.4 Adjust scarfing and gouging technique

Assessment of Student Learning

SENSE Assessment:	<ol style="list-style-type: none">1. Written Test Score 75% minimum2. Visual Inspection Passed
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**Recommended
Third Party
Certification:**

N/A

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