<table>
<thead>
<tr>
<th>Course Number:</th>
<th>WEL 263</th>
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<tbody>
<tr>
<td>Discipline:</td>
<td>WEL – Welding</td>
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<tr>
<td>Course Title:</td>
<td>Thermal Cutting Processes II - Plasma and Carbon Steel Arc: SENSE 1</td>
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<td>Short Title:</td>
<td>PAC/CAC: SENSE 1</td>
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<tr>
<td>Course Description:</td>
<td>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.</td>
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<tr>
<td>Credit Hours:</td>
<td>2</td>
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<td>Pre/ Co-requisites:</td>
<td>WEL 228 is a pre or co-requisite.</td>
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### Course Competencies

1. Evaluate cutting equipment, accessories and consumables to ensure proper safety and operations
2. Produce manual plasma arc cuts on carbon steel
3. Perform scarfing and gouging operations to remove base and weld metal on carbon steel
4. Evaluate cuts to ensure AWS D.1.1 standards are met

#### Course Sub-Competencies:

1.1 Perform safety inspections
1.2 Complete minor external repairs to oxyfuel cutting equipment
1.3 Set up manual plasma arc equipment for cutting carbon steel
1.4 Set up manual plasma arc equipment for cutting aluminum
1.5 Set up manual plasma arc equipment for cutting austenitic stainless steel
1.6 Set up manual air carbon arc equipment for cutting carbon steel
2.1 Complete straight, square edge cutting operations in the flat position on carbon steel with PAC equipment
2.2 Complete straight, square edge cutting operations in the flat position on aluminum with PAC equipment
2.3 Complete straight, square edge cutting operations in the flat position on austenitic stainless steel with PAC equipment
2.4 Complete shape, square edge cutting operations in the flat position on carbon steel with PAC equipment
2.5 Complete shape, square edge cutting operations in the flat position on aluminum with PAC equipment
2.6 Complete shape, square edge cutting operations in the flat position on austenitic stainless steel with PAC equipment
3.1 Remove base metal in the flat position with CAC-A equipment
3.2 Remove base metal in the horizontal position with CAC-A equipment
3.3 Remove weld metal in the flat position with CAC-A equipment
3.4. Remove weld metal in the horizontal position with CAC-A equipment
4.1 Analyze completed cuts
4.2 Adjust cutting technique
4.3 Analyze completed scarfing and gouging results
4.4 Adjust scarfing and gouging technique

### Assessment of Student Learning

**SENSE Assessment:**

1. Written Test Score 75% minimum
2. Visual Inspection Passed
Recommended Third Party Certification: N/A

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