Welding 102 - Advanced Shielded Metal Arc Welding (SMAW)
Outline of Instruction

Course Information
Organization: Monroe County Community College (MCCC) Applied Science and Engineering Technology
Development Date: 05-08-2008
Course Number: Weld 102
Potential Hours of Instruction: 120
Total Credits: 6

Description
Advanced Shielded Metal Arc Welding concentrates on safe welding and thermal cutting practices. Students will follow procedures to deposit sound welding techniques in the horizontal, vertical up and overhead positions using E6010 and E7018 electrodes. The student will also follow procedures to deposit sound welding techniques in the vertical pipe fillet (5F) position using E6010 and E7018 electrodes.

Types of Instruction
<table>
<thead>
<tr>
<th>Instruction Type</th>
<th>Contact Hours</th>
<th>Credits</th>
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<tbody>
<tr>
<td>On-Campus Lab</td>
<td>120</td>
<td>6</td>
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Textbooks
Advanced Shielded Metal Arc Welding. Hobart Brothers.

Learner Supplies

Prerequisites
Weld 100

General Education Outcomes
A. Obey all safety policies regarding welding, cutting and grinding equipment.
B. Assemble welding and cutting stations.
C. Correctly assemble common welding machines and cutting equipment.
D. Correctly identify welding defects and explain methods to prevent reoccurrence.
E. Perform repairs on common weld defects.
F. Students will be able to deposit weld metal in all positions using E6010 and E7018 electrodes. Welds to be deposited in fillet and groove type weld joints on plate in all
positions.

G. Students will be able to deposit weld metal using E6010 and E7018 electrodes to deposit welds in the vertical position on a pipe fillet joint.

H. Students will gain enough proficiency in SMAW to pass any conventional plate certification test and gain experience with stainless steel electrodes on mild steel and stainless steels.

I. Students will be able to identify and solve common weldability problems.

**External Standards**

Visual grading will be applied to approximately half of the student’s projects. The remaining grades on projects will be determined by guided bend tests on Vee-groove joints in all positions, and passing predicated on standards developed by the American Welding Society (AWS).

**Course Outcomes**

A. Obey all safety policies regarding welding, cutting and grinding equipment.

B. Follow procedures to deposit sound welding techniques in the horizontal, vertical up and overhead positions using E6010 and E7018 electrodes.

C. Follow procedures to deposit sound welding techniques in the vertical pipe fillet (5F) position using E6010 and E7018 electrodes.

D. Successfully complete three guided bend tests in various positions.

E. Successfully perform standard state welder certification requirements.