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|  | **Course:** | **WEL 111** |
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|  | **Title:** | **Advanced Shielded Metal Arc II** |
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|  | **Long Title:** | **Advanced Shielded Metal Arc II** |
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|  | **Course Description:** | **Covers safety inspections, minor repairs, operating parameters, operation of SMAW equipment utilizing various electrodes, essential welding information from codes or other standards, and performance of weld inspections.** |
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|  | **Min Credit:** | **4** |

 STANDARD COMPETENCIES:

1. Follow shop safety practices.
2. Maintain a clean, safe work area.
3. Prepare assigned records.
4. Follow assigned instructions to complete work assignments.
5. Participate in assigned fabrication projects.
6. Perform safety inspections on SMAW equipment
7. Make minor external repairs as necessary to SMAW equipment.
8. Set up for shielded metal arc welding and gouging operations on plain carbon steel.
9. Operate shielded metal arc welding equipment.
10. Make a fillet weld in the flat position utilizing E-7024 electrodes.
11. Make fillet welds on plain carbon steel utilizing stainless steel electrodes.
12. Make groove welds on plain carbon steel utilizing nickel electrodes.
13. Perform plate-padding operations on plain carbon steel utilizing hard-surfacing electrodes.
14. Perform gouging operations on plain carbon steel utilizing gouging electrodes.
15. Make a vertical up backed up groove weld utilizing E-7018 electrodes.
16. Examine tack and completed welds.
17. Execute corrective actions to repair surface flaws on welds and base metals.
18. Recognize fundamental principles of the SMAW process.
19. Explain fundamental principles of the SMAW process.
20. Recognize the role of welding inspection and testing in industry.
21. Locate essential information from a code or other standard.
22. Locate essential information for welding procedure and performance qualification.
23. Perform visual examination.
24. Perform bend testing.
25. Interpret destructive test results.
26. Prepare inspection reports.

 TOPICAL OUTLINE:

1. Safety and Record Keeping
   1. Follow shop safety practices.
   2. Maintain a clean, safe work area.
   3. Prepare assigned records.
   4. Follow assigned instructions to complete work assignments.
   5. Participate in assigned fabrication projects.
   6. Perform safety inspections on SMAW equipment
   7. Make minor external repairs as necessary to SMAW equipment.
2. Equipment Setup and Operation
   1. Set up for shielded metal arc welding and gouging operations on plain carbon steel.
   2. Operate shielded metal arc welding equipment.
   3. Make a fillet weld in the flat position utilizing E-7024 electrodes.
   4. Make fillet welds on plain carbon steel utilizing stainless steel electrodes.
   5. Make groove welds on plain carbon steel utilizing nickel electrodes.
   6. Perform plate-padding operations on plain carbon steel utilizing hard-surfacing electrodes.
   7. Perform gouging operations on plain carbon steel utilizing gouging electrodes.
   8. Make a vertical up backed up groove weld utilizing E-7018 electrodes.
   9. Examine tack and completed welds.
   10. Execute corrective actions to repair surface flaws on welds and base metals.
   11. Recognize fundamental principles of the SMAW process.
   12. Explain fundamental principles of the SMAW process.
3. Welding Inspection and Testing
   1. Recognize the role of welding inspection and testing in industry.
   2. Locate essential information from a code or other standard.
   3. Locate essential information for welding procedure and performance qualification.
   4. Perform visual examination.
   5. Perform bend testing.
   6. Interpret destructive test results.
   7. Prepare inspection reports.