|  |  |  |
| --- | --- | --- |
|  | **Course:** | **WEL 110** |
|  |  |  |
|  | **Title:** | **Advanced Shielded Metal Arc I** |
|  |  |  |
|  | **Long Title:** | **Advanced Shielded Metal Arc I** |
|  |  |  |
|  | **Course Description:** | **Covers safety inspections, minor repairs, operating parameters, operation of SMAW equipment, and SMAW operations on groove and fillet welds utilizing E-6010 and E-7018 electrodes. Layout procedures will be practiced during this course.** |
|  |  |  |
|  | **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 operations on plain carbon steel.
9. Operate shielded metal arc welding equipment.
10. Make groove and heavy fillet welds, all positions on plain carbon steel utilizing E-6010 and E-7018 electrodes.
11. Examine tack and completed welds.
12. Execute corrective actions to repair surface flaws on welds and base metals.
13. Recognize fundamental principles of the SMAW process.
14. Explain fundamental principles of the SMAW process.
15. Interpret drawing and specification information.
16. Prepare work area for layout.
17. Prepare materials list.
18. Select Material.
19. Layout material.
20. Layout parts using advanced measurement practices.
21. Fabricate parts from a drawing or sketch.

 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 operations on plain carbon steel.
   2. Operate shielded metal arc welding equipment.
   3. Make groove and heavy fillet welds, all positions on plain carbon steel utilizing E-6010 and E-7018 electrodes.
   4. Examine tack and completed welds.
   5. Execute corrective actions to repair surface flaws on welds and base metals.
   6. Recognize fundamental principles of the SMAW process.
   7. Explain fundamental principles of the SMAW process.
3. Layout Techniques
   1. Interpret drawing and specification information.
   2. Prepare work area for layout.
   3. Prepare materials list.
   4. Select Material.
   5. Layout material.
   6. Layout parts using advanced measurement practices.
   7. Fabricate parts from a drawing or sketch.