

# Dakota County Technical College

## WELD 1230: Shield Metal Arc Welding II

### A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: \*.\*

Lab Hours/Week: 3

OJT Hours/Week: \*.\*

Prerequisites: None

Corequisites: None

MnTC Goals: None

Upon proper instruction the student will perform out of position weldments using the two basic code rods of industry, 6010 and 7018. Upon proper instruction the student will perform a certification plate to American Welding Society D1.1 structural code. Proper safety and cutting practices will be emphasized. The student will practice control factors until they have mastered essential elements of visual inspection criteria. Prerequisites: Welding Safety and Theory I, Shielded Metal Arc Welding I, and must be taken at the same time as Welding Safety and Theory II

**B. COURSE EFFECTIVE DATES:** 08/27/2012 - Present

**C. OUTLINE OF MAJOR CONTENT AREAS**

## **D. LEARNING OUTCOMES (General)**

1. Demonstrate and follow all safety practices
2. Demonstrate proper lockout/tag out procedures
3. Identify and demonstrate confined space entry per simulation
4. Identify and demonstrate hot-work permit application per simulation
5. Visual inspection of welds and cuts per applicable code or standard
6. Perform all work orders in accordance with shop standards
7. CAC-A equipment setup and basic operation
8. Manual CAC-A on  $\frac{1}{4}$ "
9. Manual CAC-A  $\frac{1}{2}$ "+
10. Practice field forming of plate
11. Practice field forming of sheet
12. SMAW equipment setup and basic operation
13. Perform arc blow control methods
14. Master amperage and voltage(arc length) control
15. Master travel and work angles control
16. Master travel speed control
17. Master electrode manipulation control
18. Perform proper arc striking, restart, and crater fill techniques
19. Stringer beads in the vertical position, upward travel with E7018 and E6010
20. Surfacing welds in the vertical position with E7018 and E6010
21. 3F single pass weld with E7018 and E6010
22. 3F multi pass weld with E7018 and E6010
23. 3G single pass weld with E7018 and E6010
24. 3G multi pass weld with E7018 and E6010
25. Surfacing welds in the overhead position with E7018 and E6010
26. 4F single pass weld with E7018 and E6010
27. 4F multi pass weld with E7018 and E6010
28. 4G single pass weld with E7018 and E6010
29. 4G multi pass weld with E7018 and E6010
30. Pass welder qualification test on  $\frac{3}{8}$ " material in 3G

## **E. Minnesota Transfer Curriculum Goal Area(s) and Competencies**

None

## **F. LEARNER OUTCOMES ASSESSMENT**

As noted on course syllabus

## **G. SPECIAL INFORMATION**

None noted