



SHIELD METAL ARC WELDING II — WELD 1230

A. Course Description

- **Credits:** 3.00
- **Lecture Hours/Week:** 0.00
- **Lab Hours/Week:** 3.00
- **OJT Hours/Week:** 0
- **Prerequisites:** None
- **Corequisites:** None
- **MnTC Goals:** None

This course develops the welding skills necessary for the Shield Metal Arc Welding (SMAW) process on carbon steel plate in vertical and overhead positions. Students weld certification plates to American Welding Society (AWS) D1.1 structural code. 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: 8/27/12 – Present

C. Outline of Major Content Areas

As noted on course syllabus

D. Learning Outcomes

1. Demonstrate proper electrode control and manipulation for carbon steel welds.
2. Demonstrate proper safety practices
3. Determine proper settings for amperage and voltage on the welding machine for SMAW welds.
4. Determine proper travel, speed, and work angles for SMAW welding for carbon steel welds.
5. Perform SMAW equipment setup and basic operation for carbon steel welds.
6. Perform arc blow control procedures.
7. Perform iron worker and band saw setup and operation.
8. Perform manual CAC cutting on 1/4" to 1/2" metal plate.
9. Perform sheet metal cutting and forming.
10. Perform stringer bead surfacing, 3F single pass, 3G single pass, and 3G multi pass welds in the vertical position on carbon steel using E7018 and E6010 electrodes.
11. Perform stringer bead surfacing, 4F single pass, 4G single pass, and 4G multi pass welds in the overhead position on carbon steel using E7018 and E6010 electrodes.
12. Visually inspect welds and cuts to determine if standards are met.

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

F. Learner Outcomes Assessment

As noted on course syllabus

G. Special Information

None noted