

# Minnesota State College Southeast

## INDS 1629: Welding Technologies 2

### A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: 2

Lab Hours/Week: 2

OJT Hours/Week: \*.\*

Prerequisites: None

Corequisites: None

MnTC Goals: None

This course is an application-oriented introduction to the field of welding. Areas covered will be: basic weld metallurgy, electrode selection, AC/DC Stick (SMAW) forms and basic fabrication techniques common to the welding field. Welding positions of flat, horizontal and vertical will be taught. GMAW and GTAW welding procedures will be introduced. The student will have the opportunity to learn equipment set-up, safety, and operating factors necessary for producing quality welds. (Prerequisite: INDS1628) (3 credits: 2 lecture/1 lab)

**B. COURSE EFFECTIVE DATES:** 09/23/1998 - Present

**C. OUTLINE OF MAJOR CONTENT AREAS**

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

1. Identify weld methods
2. Identify various welding procedures
3. Define properties of metals
4. Identify five basic joint designs
5. Identify welding positions
6. List welding inspection techniques
7. Identify weld defect types
8. Interpret certification procedures
9. List different power sources
10. Describe polarity theory
11. Identify electrical safety concepts
12. Identify electrode types
13. Explain AWS numbering system
14. Describe electrode classification
15. Identify proper eye protection
16. Perform quality SMAW welds in the flat position
17. Perform quality SMAW welds in the horizontal position
18. Perform quality SMAW welds in the vertical position
19. Examine GTAW welding operations
20. Perform GTAW welds
21. Examine GMAW welding operations
22. Perform GMAW welds
23. Explain AC & DC equipment maintenance requirements
24. Demonstrate AC & DC equipment maintenance skills
25. Use safe work practices

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

None

#### **F. LEARNER OUTCOMES ASSESSMENT**

As noted on course syllabus

#### **G. SPECIAL INFORMATION**

None noted