

Minnesota State College Southeast

INDS 1630: Welding Technologies 3

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, vertical, and overhead 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. (Prerequisites: INDS1628, INDS1629) (3 credits: 2 lecture/1 lab)

B. COURSE EFFECTIVE DATES: 01/01/1999 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

D. LEARNING OUTCOMES (General)

1. Identify welding 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. Perform quality SMAW welds in the overhead position
20. Examine GTAW welding operations
21. Perform GTAW welds
22. Examine GMAW welding operations
23. Perform GMAW welds
24. Explain AC & DC equipment maintenance requirements
25. Demonstrate AC & DC equipment maintenance skills
26. 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