

Minnesota State College Southeast

WELD 1405: Safety, Theory, Blueprints, & Processes

A. COURSE DESCRIPTION

Credits: 4

Lecture Hours/Week: 4

Lab Hours/Week: *.*

OJT Hours/Week: *.*

Prerequisites: None

Corequisites: None

MnTC Goals: None

Students will be introduced to theory of the welding trade. This course covers fusion, proper heat penetration, heat distortion and its effects on parent metal, how electrical currents get from filler metal to work piece, and differences in polarity used while welding. A major component will introduce students to safe practices in welding. Students will learn the importance of personal safety equipment and apparel and how to protect against short and long term injury. Students will learn to identify dangers, how to eliminate problems through examination and to make minor repair to welding equipment and tools as expected in the trade. Students will be given an overview of blueprint reading including proper nomenclature for lines and views, reading of notes and specifications as well as identification of weld symbols. An overview of welding processes will be introduced from the fast moving production shop to the iron worker in the field. (Prerequisite: None) (4 credits: 4 lecture/0 lab)

B. COURSE EFFECTIVE DATES: 03/03/2008 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Theory
2. Safety
3. Blueprints
4. Processes

D. LEARNING OUTCOMES (General)

1. Examine different types of steels and alloys
2. Examine the effects of heat distortion
3. Examine the effects of excessive heat
4. Examine different types of electrical currents, DC & AC
5. Examine different types of electrical polarities
6. Examine how electricity gets from the electrode to the work piece
7. Examine safety procedures and practices
8. Demonstrate the use of proper clothing and protection
9. Demonstrate the proper use of equipment
10. Demonstrate safe set-up and start-up of equipment
11. Demonstrate proper handling of compressed gases
12. Identify shop hazards and dangers
13. Avoid shop hazards and dangers
14. Demonstrate proper shut-down procedures
15. Demonstrate shop cleanliness
16. Read and interpret blueprints
17. Identify weld symbols
18. Identify different views
19. Identify different types of lines and their uses
20. Identify shop and field notes
21. Identify specifications
22. Demonstrate the use of blueprints
23. Create drawings and blueprints
24. Identify different welding processes
25. Identify proper application of welding processes
26. Demonstrate proper application of welding processes (When & Where to use specific processes)

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

None

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

None noted