

Minnesota State College Southeast

ABCT 1120: Welding

A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: *.*

Lab Hours/Week: 6

OJT Hours/Week: *.*

Prerequisites: None

Corequisites: None

MnTC Goals: None

This course covers welding procedures and heat control methods for high strength steels and light gauge metals used in today's vehicle construction. Methods of welding and cutting include Oxy-fuel, Gas Metal Arc Welding (MIG), and Plasma. Welding of aluminum, brazing, and application of silicone bronze are also covered. The student will learn to set-up equipment and weld in the flat, horizontal, vertical, and overhead positions using various weld types on joint configurations typical to the auto body industry. (Prerequisite: None) (3 Credits: 0 lec/3 lab)

B. COURSE EFFECTIVE DATES: 04/27/1998 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Related health and safety
2. Equipment set-up and operation
3. Joints, positions, and weld types
4. Perform assignments
5. Capstone project

D. LEARNING OUTCOMES (General)

1. Identify welding methods
2. Describe related personal health and safety hazards
3. Identify personal protective equipment and precautions
4. Exhibit personal health and safety practices
5. Describe vehicle protection procedures and precautions
6. Perform vehicle protection procedures
7. Identify welding positions, joint types, and weld types
8. Describe base metal preparations for welding
9. Perform Oxy-fuel equipment set-up procedures
10. Perform Oxy-fuel equipment start-up/shut down procedures
11. Identify Oxy-fuel flame types
12. Identify Oxy-fuel welding heat control methods
13. Describe brazing procedures
14. Perform assigned brazing tasks
15. Describe Oxy-fuel welding procedures
16. Perform assigned welds using Oxy-fuel welding equipment
17. Perform Oxy-fuel cutting on sheet metal and thick stock
18. Describe Gas Metal Arc welding equipment set-up procedures
19. Setup Gas Metal Arc welding equipment
20. Perform assigned welds using Gas Metal Arc Welding equipment
21. Setup GMAW equipment for automatic settings
22. Perform assigned GMAW tasks using automatic settings
23. Setup GMAW equipment for application of silicone bronze
24. Perform assigned silicone bronze applications
25. Setup GMAW equipment for aluminum welding
26. Perform assigned aluminum welding tasks
27. Describe plasma arc set-up procedures
28. Setup plasma arc equipment
29. Perform plasma arc cutting assignments
30. Troubleshoot welding and cutting equipment problems
31. Perform simulated I-CAR Mig welding qualification test
32. Perform shop/equipment maintenance and clean-up duties
33. Exhibit professionalism

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

None

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

None noted