



South Central College

## ABCT 1860 AUTO BODY WELDING

### Course Outcome Summary

#### Course Information

##### Description

This course covers safety procedures, setup, and operation of MIG and oxyacetylene welding equipment. Flat, vertical, horizontal, and overhead positions on automotive sheet metal will be practiced. Oxyacetylene and plasma arc cutting processes are included

**Total Credits** 3

**Total Hours** 80

#### Types of Instruction

##### Instruction Type

##### Credits/Hours

Lecture

Lab

#### Pre/Corequisites

None

#### Institutional Core Competencies

Civic Engagement and Social Responsibility - Students will be able to demonstrate the ability to engage in the social responsibilities expected of a community member.

Communication - Students will be able to demonstrate appropriate and effective interactions with others to achieve their personal, academic, and professional objectives.

Critical and Creative Thinking - Students will be able to demonstrate purposeful thinking with the goal of using a creative process for developing and building upon ideas and/or the goal of using a critical process for the analyzing and evaluating of ideas.

#### Course Competencies

- 1. The following list of course goals will be addressed in the course. These goals are directly related to the performance objectives. [HP-I] designates an individual goal. [HP-G] designates a group goal.**
- 2. Exhibit professionalism**

3. **Comply with personal and environmental safety practices associated with clothing and the use of gloves; respiratory protection; eye protection; hand tools; power equipment; proper ventilation; and the handling, storage, and disposal of chemicals/materials in accordance with local, state, and federal safety and environmental regulations.**
4. **[HP-I] Identify weldable and non-weldable materials used in collision repair.**
5. **[HP-I] Weld and cut high-strength steel and other steels.**
6. **[HP-G] Weld and cut aluminum.**
7. **[HP-I] Determine the correct GMAW (MIG) welder type, electrode, wire type, diameter, and gas to be used in a specific welding situation.**
8. **[HP-I] Set up and adjust the GMAW (MIG) welder to "tune" for proper electrode stick-out, voltage, polarity, flow rate, and wire-feed speed required for the material being welded.**
9. **[HP-I] Store, handle, and install high-pressure gas cylinders.**
10. **[HP-I] Determine work clamp (ground) location and attach.**
11. **[HP-I] Use the proper angle of the gun to the joint and direction of gun travel for the type of weld being made in the flat, horizontal, vertical, and overhead positions.**
12. **[HP-I] Protect adjacent panels, glass, vehicle interior, etc. from welding and cutting operations.**
13. **[HP-I] Protect computers and other electronic control modules during welding procedures.**
14. **[HP-I] Clean and prepare the metal to be welded, assure good metal fit-up, apply weld-through primer if necessary, and clamp as required.**
15. **[HP-I] Determine the joint type (butt weld with backing, lap, etc.) for weld being made.**
16. **[HP-I] Determine the type of weld (continuous, butt weld with backing, plug, etc.) for each specific welding operation.**
17. **[HP-I] Perform the following welds: continuous, stitch, tack, plug, butt weld with and without backing, and fillet weld.**
18. **[HP-I] Perform visual and destructive tests on each weld type.**
19. **[HP-I] Identify the causes of various welding defects; make necessary adjustments.**
20. **[HP-I] Identify cause of contact tip burn-back and failure of wire to feed; make necessary adjustments.**
21. **[HP-I] Identify cutting process for different materials and locations; perform cutting operation.**
22. **[HP-G] Identify different methods of attaching structural components (squeeze type resistance spot welding (STRSW), riveting, structural adhesive, silicon bronze, etc.) etc.).**

### **SCC Accessibility Statement**

South Central College strives to make all learning experiences as accessible as possible. If you have a disability and need accommodations for access to this class, contact the Academic Support Center to request and discuss accommodations. North Mankato: Room B-132, (507) 389-7222; Faribault: Room A-116, (507) 332-7222.

Additional information and forms can be found at: [www.southcentral.edu/disability](http://www.southcentral.edu/disability)

This material can be made available in alternative formats by contacting the Academic Support Center at 507-389-7222.

