



South Central College

## ABCT 1880 Sheet Metal II

### Course Outcome Summary

#### Course Information

<b>Description</b>	This course teaches advanced sheet metal repairs, replacement and sectioning on exterior cosmetic panels, panel adjustments, and fitting procedures.
<b>Total Credits</b>	3
<b>Total Hours</b>	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

- 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.**
- Exhibit professionalism**
- 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] Review damage report and analyze damage to determine appropriate methods for overall repair; develop and document a repair plan.
5. [HP-I] Inspect, remove, store, and replace exterior trim and moldings.
6. [HP-I] Inspect, remove, store, and replace interior trim and components.
7. [HP-I] Inspect, remove, store, and replace non-structural body panels and components that may interfere with or be damaged during repair.
8. [HP-G] Inspect, remove, store, and replace all vehicle mechanical and electrical components that may interfere with or be damaged during repair.
9. [HP-I] Protect panels, glass, and parts adjacent to the repair area.
10. [HP-I] Soap and water wash entire vehicle; use appropriate cleaner to remove contaminants from those areas to be repaired.
11. [HP-I] Remove corrosion protection, undercoatings, sealers, and other protective coatings necessary to perform repairs.
12. [HP-I] Inspect, remove, and replace repairable plastics and other components that are recommended for off-vehicle repair.
13. [HP-I] Determine the extent of direct and indirect damage and direction of impact; develop and document a repair plan.
14. [HP-I] Inspect, remove and replace bolted, bonded, and welded steel panel or panel assemblies.
15. [HP-G] Determine the extent of damage to aluminum body panels; repair or replace.
16. [HP-I] Inspect, remove, replace, and align hood, hood hinges, and hood latch.
17. [HP-I] Inspect, remove, replace, and align deck lid, lid hinges, and lid latch.
18. [HP-I] Inspect, remove, replace, and align doors, tailgates, hatches, lift gates, latches, hinges, and related hardware.
19. [HP-I] Inspect, remove, replace, and align bumper bars, covers, reinforcement, guards, isolators, and mounting hardware.
20. [HP-I] Inspect, remove, replace and align front fenders, headers, and other panels.
21. [HP-I] Straighten and rough-out contours of damaged panels to a suitable condition for body filling or metal finishing using power tools, hand tools, and weld-on pull attachments.
22. [HP-I] Weld damaged or torn steel body panels; repair broken welds.
23. [HP-I] Restore corrosion protection.
24. [HP-G] Replace door skins.
25. [HP-I] Restore sound deadeners and foam materials.
26. [HP-G] Perform panel bonding.
27. [HP-G] Diagnose and repair water leaks, dust leaks, and wind noise.
28. [HP-I] Remove paint from the damaged area of a body panel.
29. [HP-I] Locate and reduce surface irregularities on a damaged body panel.
30. [HP-I] Demonstrate hammer and dolly techniques.
31. [HP-I] Heat shrink stretched panel areas to proper contour.
32. [HP-I] Cold shrink stretched panel areas to proper contour.
33. [HP-I] Mix body filler.

34. [HP-I] Apply body filler; shape during curing.
35. [HP-I] Rough sand cured body filler to contour; finish sand.
36. [HP-G] Determine the proper metal finishing techniques for aluminum.
37. [HP-G] Determine proper application of body filler to aluminum.
38. [HP-I] Inspect, adjust, repair or replace window regulators, run channels, glass, power mechanisms, and related controls.
39. [HP-G] Diagnose and repair water leaks, dust leaks, and wind noises; inspect, repair, and replace weather-stripping.
40. [HP-G] Inspect, repair or replace, and adjust removable, manually or power operated roof panel and hinges, latches, guides, handles, retainer, and controls of sunroofs.
41. [HP-G] Inspect, remove, reinstall, and align convertible top and related mechanisms.
42. [HP-I] Identify weldable and non-weldable materials used in collision repair.
43. [HP-I] Weld and cut high-strength steel and other steels.
44. [HP-G] Weld and cut aluminum.
45. [HP-I] Determine the correct GMAW (Mig) welder type, electrode, wire type, diameter, and gas to be used in a specific welding situation.
46. [HP-I] Set up and adjust the GMAW (MIG) welder to "tune" for proper electrode stickout, voltage, polarity, flow rate, and wire-feed speed required for the material being welded.
47. [HP-I] Store, handle, and install high-pressure gas cylinders.
48. [HP-I] Determine work clamp (ground) location and attach.
49. [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.
50. [HP-I] Protect adjacent panels, glass, vehicle interior, etc. from welding and cutting operations.
51. [HP-I] Protect computers and other electronic control modules during welding procedures.
52. [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.
53. [HP-I] Determine the joint type (butt weld with backing, lap, etc.) for weld being made.
54. [HP-I] Determine the type of weld (continuous, butt weld with backing, plug, etc.) for each specific welding operation.
55. [HP-I] Perform visual and destructive tests on each weld type.

### **SCC Accessibility Statement**

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

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