



South Central College

# ABCT 1840 Auto Collision Mechanical I

## Course Outcome Summary

### Course Information

<b>Description</b>	This course covers the principles of removing and replacing mechanical components in front and rear wheel drive vehicles as related to the auto body industry. This course includes environmental issues. (Prerequisites: None)
<b>Total Credits</b>	3
<b>Total Hours</b>	80

### Types of Instruction

Instruction Type	Credits/Hours
Lecture	1/16
Lab	2/64

### 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] Identify one □ time use fasteners .
5. [HP-G] Remove, replace, inspect or adjust power steering pump, pulleys, belts, hoses, fittings and pump mounts.
6. [HP-G] Remove and replace power steering gear (non-rack and pinion type).
7. [HP-G] Remove and replace power rack and pinion steering gear; inspect and replace mounting bushings, tie rod ends, bellow boots, and brackets; ensure proper mounting location.
8. [HP-G] Inspect and adjust (where applicable) steering linkage geometry (attitude/parallelism).
9. [HP-G] Inspect and replace pitman arm.
10. [HP-G] Inspect and replace relay (center link/intermediate) rod.
11. [HP-I] Inspect brake lines and fittings for leaks, dents, kinks, rust, cracks or wear; tighten loose fittings and supports; replace brake lines (double flare and ISO types), fittings, and supports.
12. [HP-I] Inspect flexible brake hoses for leaks, kinks, cracks, bulging or wear; remove and replace hoses; tighten loose fittings and supports.
13. [HP-G] Identify, handle, store, and install appropriate brake fluids; dispose of in accordance with federal, state, and local regulations.
14. [HP-I] Bleed (manual, pressure, vacuum or surge) hydraulic brake system.
15. [HP-G] Pressure test brake hydraulic system; determine needed repair.
16. [HP-I] Adjust brake shoes; remove and reinstall brake drums or drum/hub assemblies and wheel bearings.
17. [HP-I] Reinstall wheel and torque lug nuts.
18. [HP-I] Remove and reinstall caliper assembly.
19. [HP-I] Clean and inspect caliper mountings for wear and damage.
20. [HP-I] Check parking brake system operation.
21. [HP-G] Identify and replace ABS wheel speed sensor components.
22. [HP-G] Depressurize ABS hydraulic or electronic system.
23. [HP-G] Identify the proper procedures for handling brake dust.
24. [HP-G] Identify the proper procedures for handling brake dust.
25. [HP-G] Identify and comply with environmental concerns relating to refrigerants and coolants.
26. [HP-I] Check engine cooling and heater system hoses and belts; determine needed repairs.
27. [HP-G] Inspect, test, remove, and replace radiator, pressure cap, coolant recovery system, and water pump.
28. [HP-I] Recover, refill, and bleed system with proper coolant and check level of protection; leak test system and dispose of materials in accordance with EPA specifications.
29. [HP-G] Remove and replace fan (both electrical and mechanical), fan pulley, fan clutch, and fan shroud.
30. [HP-G] Inspect, remove, and replace auxiliary oil/fluid coolers; check oil levels.
31. [HP-G] Inspect, remove, and replace electric fan sensors; check operation.
32. [HP-G] Remove, replace, and adjust shift or clutch linkage as required.
33. [HP-G] Remove, replace, and adjust cables or linkages for throttle valve (TV), kickdown, and accelerator pedal.

34. [HP-G] Remove and replace electronic sensors, wires, and connectors.
35. [HP-G] Remove and replace powertrain assembly; inspect, replace, and align powertrain mounts.
36. [HP-G] Remove and replace drive axle assembly.
37. [HP-G] Inspect, remove and replace half shafts and axle constant velocity (CV) joints.
38. [HP-G] Inspect, remove and replace drive shafts and universal joints.
39. [HP-G] Inspect, remove and replace exhaust pipes, mufflers, converters, resonators, tail pipes, and heat shields.
40. [HP-G] Inspect, remove and replace fuel tank, fuel tank filter, fuel cap, fuel filler hose, and inertia switch; inspect and replace fuel lines and hoses; check fuel for contaminants.
41. [HP-G] Inspect, remove and replace engine components of air intake systems.
42. [HP-G] Inspect, remove and replace canister, filter, vent, and purge lines of fuel vapor (EVAP) control systems.

### **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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