



South Central College

## **ABCT 2805 Auto Body and Collision Air Conditioning**

### **Course Outcome Summary**

#### **Course Information**

<b>Description</b>	This course covers the principles of air conditioning. Various system types, collision damage analysis, malfunction diagnosis, testing, and repair are studied in the classroom. Practical worksuch as component replacement, system evacuation, charging, and preformance testing will be included.
<b>Total Credits</b>	2
<b>Total Hours</b>	48

#### **Types of Instruction**

<b>Instruction Type</b>	<b>Credits/Hours</b>
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] Check voltages in electrical wiring circuits with a DMM (digital multimeter).
5. [HP-I] Check for voltage drop and/or current flow in electrical wiring circuits and components with a DMM (digital multimeter).
6. [HP-G] Use wiring diagrams and diagnostic flow charts during diagnosis of electrical circuit problems.
7. [HP-G] Identify and comply with environmental concerns relating to refrigerants and coolants.
8. [HP-G] Maintain and verify correct operation of certified refrigerant recovery and recharging equipment.
9. [HP-I] Locate and identify A/C system service ports.
10. [HP-G] Identify and recover refrigerant from A/C system.
11. [HP-G] Recycle refrigerant in accordance with EPA regulations.
12. [HP-G] Identify, label, and store refrigerant.
13. [HP-G] Test recycled refrigerant for non-condensable gases.
14. [HP-G] Evacuate A/C system; check for leaks.
15. [HP-G] Recharge A/C system with refrigerant; perform leak test.
16. [HP-G] Identify oil type and maintain correct amount in A/C system.
17. [HP-G] Inspect, adjust, and replace A/C compressor drive belts; check pulley alignment.
18. [HP-G] Remove and replace A/C compressor; inspect, repair or replace A/C compressor mount.
19. [HP-G] Inspect, repair or replace A/C system mufflers, hoses, lines, fittings, orifice tube, expansion valve, and seals.
20. [HP-G] Inspect and replace receiver/drier or accumulator/drier.
21. [HP-G] Inspect and repair A/C component wiring.
22. [HP-G] Remove and replace fan (both electrical and mechanical), fan pulley, fan clutch, and fan shroud.
23. [HP-G] Inspect, remove, and replace electric fan sensors; check operation.
24. Identify Air Conditioning / A/C system designs.
25. Explain A/C system operation.
26. Identify A/C system parts terminology, location, and function.
27. Identify A/C oil types and usage.
28. Identify A/C service equipment, its proper usage, and maintenance.
29. Identify A/C air distribution parts terminology, location, and function.
30. Identify the use of A/C retro-fit kits and their use in automotive A/C systems.

### **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.