



South Central College

ABCT 2830 Measuring And Pulling Systems

Course Outcome Summary

Course Information

Description	Students will use mechanical and computer assisted measuring systems to analyze and develop repair procedures on frame and unibody vehicles. Frame racks, bench and floor pulling systems will be utilized to repair direct and indirect damage on open and closed panels.
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] Diagnose and measure structural damage using tram and self-centering gauges.
5. [HP-I] Attach vehicle to anchoring devices.
6. [HP-G] Analyze mash (collapse) damage.
7. [HP-G] Analyze sag damage.
8. [HP-G] Analyze sideways damage.
9. [HP-G] Analyze twist damage.
10. [HP-G] Analyze diamond frame damage.
11. [HP-I] Restore corrosion protection to repaired or replaced frame areas.
12. [HP-I] Analyze and identify misaligned or damaged steering, suspension, and powertrain components that can cause vibration, steering, and wheel alignment and chassis alignment problems.
13. [HP-I] Identify heat limitations in structural components.
14. [HP-G] Restore structural foam.
15. [HP-G] Diagnose and measure structural damage using a universal measuring system (mechanical, electrical, laser).
16. [HP-G] Diagnose and measure structural damage to vehicles using a dedicated (fixture) measuring system.
17. [HP-I] Determine the extent of the direct and indirect damage and the direction of impact; document the methods and sequence of repair.
18. [HP-I] Analyze and identify crush/collapse zones.
19. [HP-I] Diagnose and measure unibody damage using tram and self-centering gauges.
20. [HP-I] Determine and inspect the locations of all suspension, steering, and powertrain component attaching points on the vehicle.
21. [HP-G] Diagnose and measure unibody vehicles using a dedicated (fixture) measuring system.
22. [HP-G] Diagnose and measure unibody vehicles using a universal measuring system (mechanical, electronic, laser).
23. [HP-I] Determine the extent of the direct and indirect damage and the direction of impact; plan and document the methods and sequence of repair.
24. [HP-I] Attach anchoring devices to vehicle; remove or reposition components as necessary.
25. [HP-I] Identify heat limitations in unibody vehicles.
26. [HP-I] Identify proper cold stress relief methods.
27. [HP-G] Determine the extent of damage to aluminum structural components; repair, weld, or replace.
28. [HP-I] Analyze and identify crush/collapse zones.
29. Identify under body spec manuals.
30. Interpret upper body spec manuals.
31. Illustrate frame measurements.
32. Identify suspension angles.

33. **Diagnose wheel alignment angles.**
34. **Describe body alignment procedures.**

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

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