

# Minnesota State College Southeast

## ABCT 1335: Auto Body Mechanical 2

### A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: 2

Lab Hours/Week: 2

OJT Hours/Week: \*.\*

Prerequisites: None

Corequisites: None

MnTC Goals: None

The second mechanical course in the auto body program advances the knowledge base and hands on of many systems introduced in Auto Body Mechanical 1. Air conditioning, cooling systems, steering and suspension, brakes, and computerized body and mechanical systems are worked with from a collision damaged perspective. Hands-on assignments are involved in addition to the theory of the systems physics. Scan tools are used in the diagnostics of many of the systems as well as other specialized tools. Utilization of service procedures and service data bases are significant part of the experiences in this course as well. (Prerequisites or concurrent: ABCT1135, ABCT1115, ABCT1125, ABCT1315) (3 credits: 2 lecture/1 lab)

**B. COURSE EFFECTIVE DATES:** 02/23/2015 - Present

### C. OUTLINE OF MAJOR CONTENT AREAS

1. Use of proper safety and service procedures for mechanical systems
2. Servicing of collision damaged air conditioning and cooling systems
3. Servicing of collision damaged steering, suspension, and brake systems
4. Servicing of air intake, fuel, exhaust, and emission systems
5. Use of scan tools for mechanical and body systems following a collision event
6. Perform wheel alignment and

#### **D. LEARNING OUTCOMES (General)**

1. Demonstrate safe procedures for mechanical system procedures
2. Secure mechanical service procedures for specific vehicles and system
3. Explain air conditioning system physics
4. Discharge and recover air conditioning system refrigerant
5. Replace air conditioning systems components
6. Identify A/C system capacities and type for refrigerant and oil
7. Recharge A/C system including adding of refrigerant oil
8. Performance test A/C system and leak test system
9. Perform steering column inspection and service procedures
10. Perform steering system inspection and service procedures
11. Identify brake system components and functions
12. Identify brake system collision damage and damage due to normal wear
13. Remove and reinstall collision damaged brake components
14. Perform drive line mount inspection and service procedures
15. Identify major driveline components and removal and installation procedures
16. Perform major driveline component removal and installation procedures
17. Perform suspension system inspection, component replacement and service procedures
18. Identify wheel alignment angles and determine procedures required following steering and suspension component replacement
19. Identify intake, fuel, exhaust, and emission system relationships and service procedures
20. Demonstrate scan tool procedures for mechanical and body systems
21. Identify service procedures and test for specific mechanical and body codes identified
22. Perform tire pressure monitor procedures
23. Identify hybrid electrical service procedures for high voltage system
24. Identify ABS system components, safety procedures, and service procedures
25. Perform cooling system refill and bleeding procedures
26. Perform drive axel inspection and replacement procedures
27. Complete required course assignments, quizzes, and tests
28. Demonstrate professionalism

#### **E. Minnesota Transfer Curriculum Goal Area(s) and Competencies**

None

#### **F. LEARNER OUTCOMES ASSESSMENT**

As noted on course syllabus

#### **G. SPECIAL INFORMATION**

None noted