

# Minnesota State College Southeast

## **AUTO 1203: Drive Train and Axle Theory**

### **A. COURSE DESCRIPTION**

Credits: 2

Lecture Hours/Week: 2

Lab Hours/Week: \*.\*

OJT Hours/Week: \*.\*

Prerequisites: None

Corequisites: None

MnTC Goals: None

This course will instruct the student in repair procedures of manual transmission, four wheel drive, all wheel drive, and front/rear differential. Emphasis will be placed on all components needed for engagement and operation of the above detailed. (Prerequisites: AUTO1105, AUTO1106, or instructor approval) (2 Credits: 2 lecture/0 lab)

**B. COURSE EFFECTIVE DATES:** 10/06/1998 - Present

### **C. OUTLINE OF MAJOR CONTENT AREAS**

1. Safety Precautions
2. Manual Transmission, Four-wheel Drive, All-wheel Drive, and Front/Rear Differential Repair Procedures

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

1. Identify manual transaxle
2. Identify shop safety precautions
3. Identify manual transaxle components
4. Identify manual transaxle fluids
5. Describe steering/suspension removal
6. Describe axle shaft removal
7. Describe transaxle removal procedure
8. Describe manual transaxle power flow
9. Calculate manual transaxle gear ratio
10. Analyze manual transaxle operation
11. Describe manual transaxle problems
12. Analyze speedometer operation
13. Identify manual transmission
14. Describe manual transmission problems
15. Complete mid-course exam
16. Define clutch terms
17. Identify clutch components
18. Analyze clutch operation
19. Describe driveline service precautions
20. Define driveline terms
21. Examine transfer case operations
22. Identify transfer case lubricants
23. Describe (full time) transfer case powerflow
24. Describe (part time) transfer case powerflow
25. Explain electronic, manual, vacuum shift mechanisms
26. Examine differential designs
27. Identify differential components and types
28. Describe differential powerflow
29. Calculate drive axle ratios
30. Exhibit professionalism
31. Complete final exam

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

None

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

As noted on course syllabus

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

None noted