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