AUTO 1202: Auto Trans/Transaxle 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 includes the study of torque converters, planetary gears, clutches, bands, and hydraulics. Instruction of computer and electronic shift controls is also emphasized. The class stresses how an automatic transmission operates and its functions in power train application. (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. Transmission Safety Procedures
2. Study of Torque Converters, Planetary Gears, Clutches, Bands, and Hydraulics
3. Computer and Electronic Shift Controls
D. LEARNING OUTCOMES (General)
1. Describe transmission safety procedures  
2. Perform transmission safety practices  
3. Identify basic automatic transmission types  
4. Describe converter operation  
5. Inspect torque converters  
6. Complete final exam  
7. Describe stall test procedures  
8. Describe lock-up torque converter operation  
9. Describe servicing automatic transmission  
10. Identify special tool usage  
11. Identify seals, functions, and types  
12. Describe planetary gears  
13. Explain clutch and band operation  
14. Explain power flow  
15. Describe endplay requirements  
16. Inspect case and components  
17. Describe bearing/brushing replacement  
18. Explain one-way clutch operation  
19. Explain Pascal's law  
20. Explain friction materials  
21. Explain multiple disc clutch operation  
22. Explain basic valve types  
23. Explain main control pressure system operation  
24. Explain converter cooler and lube circuits  
25. Describe governor system  
26. Explain throttle valve system  
27. Complete mid-course exam  
28. Explain vacuum modulator testing procedures  
29. Explain accumulator and servo systems  
30. Describe basic valve body components and functions  
31. Inspect valve body  
32. Inspect governor assembly  
33. Inspect front pumps  
34. Trace basic hydraulic circuits  
35. Describe TV system manual linkage adjustments  
36. Describe basic pressure test procedures  
37. Explain seal replacement  
38. Inspect transmission bands  
39. Explain band adjustment  
40. Describe case repair  
41. Describe pretest procedures  
42. Describe road or dyno test  
43. Describe linkage diagnosis  
44. Describe throttle valve system diagnosis
45. Describe clutch and band diagnosis
46. Describe hydraulic pressure test
47. Describe converter and cooler cleaning and testing
48. Observe instructors air pressure test demonstration
49. Describe governor systems analysis
50. Service cooler and lines
51. Replace modulator
52. Service filters
53. Exhibit 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