



## VEHICLE MAINTENANCE — AUTM 1043

### A. Course Description

- **Credits:** 4.00
- **Lecture Hours/Week:** 1.00
- **Lab Hours/Week:** 3.00
- **OJT Hours/Week:** 0
- **Prerequisites:** None
- **Corequisites:** None
- **MnTC Goals:** None

In this course you will learn to inspect, and provide basic service and repairs on both manual and automatic transmissions & transaxles differential, transfer cases, drive axles and wheel bearings. Pre-requisites: AUTM 1003, 1013, 1023, 1033 (with a C or better).

### B. Course Effective Dates: 8/21/17 – Present

### C. Outline of Major Content Areas

As noted on course syllabus

### D. Learning Outcomes

1. Check and adjust clutch master cylinder fluid level.
2. Check and adjust differential housing fluid level.
3. Check fluid level in a transmission or a transaxle equipped with and without a dip-stick
4. Check transmission fluid condition; check for leaks.
5. Check, inspect, and adjust differential housing fluid level, check for leaks
6. Clean and inspect differential housing; check for leaks; inspect housing vent.
7. Complete work order to include customer information vehicle identifying information, customer concern, related service history, cause, and correction
8. Diagnose electrical/electronic concerns using principals of electricity (Ohm's law)
9. Drain and refill differential housing.
10. Drain and replace fluid and filter(s) on automatic transmission, manual transmission, and final drive unit.
11. Inspect and replace drive axle wheel studs.
12. Inspect and replace engine cooling and heater system hoses
13. Inspect engine assembly for fuel, oil, coolant, and other leaks; determine necessary
14. Inspect front-wheel bearings and locking hubs.

15. Inspect replace and align power train mounts.
16. Inspect, adjust, and replace external manual valve shift linkage, transmission range sensor/switch, and park/neutral position switch
17. Inspect, adjust, and replace external manual valve shift linkage, transmission range sensor/switch, and park/neutral position switch.
18. Inspect, and test fans(s) (electrical or mechanical), fan clutch, fan shroud, and air dams
19. Inspect, remove, and replace front wheel drive (FWD) bearings, hubs, and seals.
20. Inspect, replace, and adjust drive belts, tensioners, and pulleys; check pulley and belt
21. Inspect, service, and replace shafts, yokes, boots, and universal/CV joints.
22. Inspect, test, and replace thermostat and gasket
23. Maintain and service differential.
24. Perform common fastener and thread repair to include, remove broken bolt, restore internal and external threads, and repair internal threads with thread insert
25. Perform cooling system, cap, and recovery system tests (pressure and temperature) pressure tests; check coolant condition; inspect and test radiator, pressure cap, coolant recovery tank and hoses; determine necessary action
26. Perform oil and filter change
27. Research applicable vehicle and service information, fluid type, vehicle service history, service precautions, and technical service bulletins.
28. Test and perform cooling system services
29. Test coolant; drain and recover coolant; flush and refill cooling system with recommended coolant; bleed air as required

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

**F. Learner Outcomes Assessment**

As noted on course syllabus

**G. Special Information**

None noted

