



ENGINE PERFORMANCE 1 — AUTM 2314

A. Course Description

- **Credits:** 3.00
- **Lecture Hours/Week:** 1.00
- **Lab Hours/Week:** 2.00
- **OJT Hours/Week:** 0
- **Prerequisites:** None
- **Corequisites:** None
- **MnTC Goals:** None

This course covers the operation and servicing techniques required to diagnose and repair automotive fuel system related concerns encountered on modern automobiles Prerequisites: AUTM 1003 and 1013

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

C. Outline of Major Content Areas

As noted on course syllabus

D. Learning Outcomes

1. 1. Replace fuel filter(s).
2. 1. Understand safety concerns when servicing/repairing a fuel system and demonstrate appropriate fuel system precautions.
3. 10. Perform fuel/air induction system cleaning service
4. 11. Check and refill diesel exhaust fluid (DEF).
5. 12. Research, identify, and discuss electrical operation based on fuel system wiring diagram
6. 13. Obtain and analyze fuel system data with scan tool and determine necessary action
7. 14. Research and identify the differences between throttle body, port, and direct injection fuel systems
8. 15. Research and identify the differences between gasoline and diesel fuel systems
9. 16. Diagnose (troubleshoot) hot or cold no-starting, hard starting, poor driveability, incorrect idle speed, poor idle, flooding, hesitation, surging, engine misfire, power loss, stalling, poor mileage, dieseling, and emissions problems related to the fuel system; determine necessary action.

10. 2. Research and demonstrate proper fuel system pressure release procedure
11. 3. Inspect fuel for contaminants and quality; determine necessary action.
12. 4. Inspect and test fuel pumps and pump control systems for pressure, regulation, and volume; determine and perform necessary action.
13. 6. Inspect and test fuel injectors; determine and perform necessary action.
14. 7. Inspect, service, or replace air filters, filter housings, and intake duct work.
15. 8. Inspect throttle body, air induction system, intake manifold and gaskets for vacuum leaks and/or unmetered air; determine and perform necessary action.
16. 9. Verify idle control operation.

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

F. Learner Outcomes Assessment

As noted on course syllabus

G. Special Information

None noted