

Minnesota State College Southeast

AUTO 1148: Vehicle Driveability

A. COURSE DESCRIPTION

Credits: 1

Lecture Hours/Week: *.*

Lab Hours/Week: 2

OJT Hours/Week: *.*

Prerequisites: None

Corequisites: None

MnTC Goals: None

This course develops skills in diagnosing, testing, and correcting problems related to engine performance. A strong emphasis will be placed on computer controlled systems. (Prerequisites: AUTO1105, AUTO1106, AUTO1118, AUTO1138, AUTO1208, AUTO1228 or instructor approval) (1 Credit: 0 lecture/1 lab)

B. COURSE EFFECTIVE DATES: 04/27/1998 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Safety Requirements
2. Computerized Engine Controls Diagnosis and Repair
3. Ignition System Diagnosis and Repair
4. Fuel, Air Induction, and Exhaust Systems Diagnosis and Repair
5. Emissions Control Systems Diagnosis and Repair

D. LEARNING OUTCOMES (General)

1. Comply with personal and environmental safety practices associated with clothing; eye protection; hand tools; power equipment; proper ventilation; and the handling, storage, and disposal of chemicals/materials in accordance with local, state, and federal safety and environmental regulations.
2. Diagnose the causes of emissions or driveability concerns resulting from malfunctions in the computerized engine control system with stored diagnostic trouble codes. P-1
3. Diagnose emissions or driveability concerns resulting from malfunctions in the computerized engine control system with no stored diagnostic trouble codes; determine necessary action. P-1
4. Diagnose driveability and emissions problems resulting from malfunctions of interrelated systems (cruise control, security alarms, suspension controls, traction controls, A/C, automatic transmissions, non-OEM-installed accessories, or similar systems); determine necessary action. P-3
5. Diagnose ignition system related problems such as no-starting, hard starting, engine misfire, poor driveability, spark knock, power loss, poor mileage, and emissions concerns on vehicles with electronic ignition (distributorless) systems; determine necessary action. P-1
6. Diagnose ignition system related problems such as no-starting, hard starting, engine misfire, poor driveability, spark knock, power loss, poor mileage, and emissions concerns on vehicles with distributor ignition (DI) systems; determine necessary action. P-1
7. Diagnose hot or cold no-starting, poor driveability, incorrect idle speed, poor idle, flooding, hesitation, surging, engine misfire, power loss, stalling, poor mileage, dieseling, and emissions problems on vehicles with carburetor-type fuel systems; determine necessary action. P-3
8. Diagnose hot or cold no-starting, poor driveability, incorrect idle speed, poor idle, flooding, hesitation, surging, engine misfire, power loss, stalling, poor mileage, dieseling, and emissions problems on vehicles with injection-type fuel systems; determine necessary action. P-3
9. Diagnose oil leaks, emissions, and drivability problems resulting from malfunctions in the positive crankcase ventilation (PCV) system; determine necessary action. P-2
10. Diagnose emissions and drivability problems caused by malfunctions in the exhaust gas recirculation (EGR) system; determine necessary action. P-1
11. Diagnose emissions and drivability problems resulting from malfunctions in the secondary air injection and catalytic converter systems; determine necessary action. P-2
12. Diagnose emissions and drivability problems resulting from malfunctions in the intake air temperature control system; determine necessary action. P-3
13. Diagnose emissions and drivability problems resulting from malfunctions in the early fuel evaporation (Intake Manifold Temperature) control system; determine necessary action. P-3
14. Diagnose emissions and drivability problems resulting from malfunctions in the evaporative emissions control system; determine necessary action. P-1
15. Verify complaint
16. 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