

Minnesota State College Southeast

AUTO 1208: Engine Performance Theory

A. COURSE DESCRIPTION

Credits: 2

Lecture Hours/Week: 2

Lab Hours/Week: *.*

OJT Hours/Week: *.*

Prerequisites: None

Corequisites: None

MnTC Goals: None

This is a study of the theory and principles of operation of basic automotive fuel delivery systems including injection systems and emission control systems. This course also covers basic ignition electrical systems and mechanical conditions related to engine tune up. It involves the theory and understanding of the use of various testing and test instruments to determine engine mechanical condition. (Prerequisites: AUTO1105, AUTO1106, or instructor approval) (2 Credits: 2 lecture/0 lab)

B. COURSE EFFECTIVE DATES: 10/05/1998 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Safety Procedures
2. Operation of Basic Automotive Fuel Delivery Systems
3. Basic Ignition Electrical Systems and Mechanical Conditions Related to Engine Tune Up
4. Use of Various Testing Instruments

D. LEARNING OUTCOMES (General)

1. Identify safety procedures
2. Explain fuel system principles
3. Identify fuel delivery system components
4. Identify emission system components
5. Explain operation of emission systems
6. Explain emission system tests
7. Explain fuel make-up
8. Explain fuel quality testing
9. Define a tune up
10. Explain ignition system operation
11. Identify ignition system components
12. Describe ignition system tests
13. Explain injector testing
14. Identify a compression test
15. Identify complete engine computer test procedures
16. Complete mid-term exam
17. Explain a running compression test
18. Identify a power balance test
19. Identify a cooling system test
20. Describe oil pressure test
21. Analyze engine mechanical condition
22. Identify a visual inspection
23. Describe road test procedures
24. Verify complaint
25. Explain scan tool testing
26. Identify a vacuum test
27. Explain exhaust gas testing procedures
28. Explain engine analyzer
29. Exhibit professionalism
30. 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