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