University of Arkansas - Fort Smith
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General Syllabus

ASTE 14804 Engine Performance

I Credit Hours: 4 Lecture Hours: 2 Laboratory Hours: 4

Prerequisite or corequisite: ASTE 14304 Electrical Systems I

Effective Catalog: 2018-2019

I. Course Information

A. Catalog Description

Study of the basic functioning, servicing and testing of the emissions process and how the process affects different automotive systems.

B. Additional Information

Atmospheric pollution and smog control devices are the major areas of consideration in this course. Instruction is given concerning positive crankcase ventilating systems (PVC), air-injection systems (AIS), vapor-recovery system (VVR), and controlled combustion system (IMCO).

II. Student Learning Outcomes

A. Subject Matter

Upon successful completion of this course, the student will be able to:

1. Describe basic engine construction and operational theories.
2. Interpret wiring diagrams and show how inputs are associated with outputs.
3. Explain the different types of intake systems and exhaust systems.
4. Analyze the oscilloscope readings of various input sensors.
5. Test fuel pressure readings and compare with OE specifications.

B. University Learning Outcomes-

This course enhances student abilities in the following areas:

Communication Skills (written and oral)
Students must deal effectively with customers' complaints and ask effective questions to elicit more information.

Analytical Skills
Critical Thinking Skills: Students must analyze data gathered from customer complaints, inspections, tests, etc. in order to diagnose problems.

III. Major Course Topics

A. Overview of Engine Performance
B. Basic Theories of Motion, Force, Energy, Aerodynamics, and Combustion
C. Engine Design and Operation
D. Electricity and Electronics
E. Intake and Exhaust Systems
F. Input Sensors
G. Fuel Systems
H. Distributor Ignition
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