Course Prefix and Number: AUT 155

Credits: 5

Course Title: Basic Automotive Engine Performance Diagnostics

Course Description: Introduces basic engine performance concepts, including theory and practical application. Covers vehicle communications, scan-tool diagnostics, basic engine mechanical tests, and diagnosing and repairing vehicle drivability issues. Provides preparation for the Automotive Service Excellence (ASE) A8 Engine Performance Certification examination. Prerequisites: AUT 111 and AUT 245, or program head approval. Lecture 2 hours. Laboratory 6 hours. Total 8 hours per week.

General Course Purpose: This course introduces anyone studying automotive service technology, hobbyists, and service technicians to the safe and proper procedures for diagnosing and repairing vehicle drivability issues.

Course Prerequisites and Co-requisites:
Prerequisites: AUT 111 and AUT 245, or program head approval

Student Learning Outcomes:
Upon completing the course, the student will be able to
a. Understand engine performance concepts;
b. Understand proper use of scan tools and their diagnostic capabilities;
c. Define the basic internal combustion engine principles;
d. Explain the functions of modern automotive computer systems;
e. Identify control system terms and components;
f. Interpret basic engine mechanical tests;
g. Analyze engine performance problems;
h. Evaluate engine performance problems using a scan tool;
i. Properly diagnose and repair engine drivability (performance) issues; and
j. Properly diagnose and repair vehicle fuel and ignition systems.

Major Topics to Be Included:
a. Engine integrity
b. Fuel systems, components, and service
c. Gasoline and diesel fuel engine design and components
d. Engine-related inputs
e. Process and outputs
f. Troubleshooting engine performance issues using various scanners and labscopes
g. Evaluating diagnostic trouble codes (DTCs)
h. OBDII monitors
i. Basic emissions control systems
j. Ignition systems, components and service
k. Vehicle performance (drivability)

Effective Date of Course Content Summary: January 30, 2018