Master Syllabus

AUT 2215 - Automotive Engine Performance II

Division: Science, Mathematics and Engineering

Department: Automotive Technology

Credit Hour Total: 4.0   **Lecture Hrs:** 1.6 **Lab Hrs:** 7.2

Prerequisite(s): AUT 1115

Date Revised: October 2013

Course Description:

Advanced diagnosis and repair of computer controlled fuel delivery, fuel injection, ignition, emission systems and proper use of advanced engine performance diagnostic equipment. Basic handtools required.

General Education Outcomes:

- Critical Thinking/Problem Solving Competency
- Computer Literacy Competency

Course Outcomes:

Fuel delivery evaluation
Identify faults in the fuel delivery system by measuring fuel pressure and volume and using current ramping technology. Determine necessary action for repair.

Assessment Method: Locally developed exams
Performance Criteria: 70% of students must pass with a minimum of 70% correct on written exam.

Assessment Method: Performance appraisals
Performance Criteria: Score 2 on a rubric 0-4

Assessment Method: Simulations
Performance Criteria: Score 2 on a rubric 0-4

Sensor diagnosis
Diagnose fuel and ignition system sensor operation using scan tools, DVOMs and oscilloscopes. Determine necessary action for repairs.

Assessment Method: Locally developed exams
Performance Criteria: 70% of the students pass with a minimum of 70% correct

Assessment Method: Performance appraisals
Performance Criteria: Score 2 on a rubric 0-4

Assessment Method: Simulations
Performance Criteria: Score 2 on a rubric 0-4

Diagnostic Trouble Codes
Retrieve Diagnostic Trouble Codes (DTCs). Use published DTC flow charts and diagnostic procedures to determine the necessary course of action to identify and repair the root cause of the DTC.

Assessment Method: Locally developed exams
Performance Criteria: 70% of students pass with a minimum of 70% correct

Assessment Method: Performance appraisals
Performance Criteria: Score 2 on a rubric 0-4

Assessment Method: Simulations
Performance Criteria: Score 2 on a rubric 0-4

Ignition system diagnosis
Diagnose malfunctions of Waste Spark, Coil on Plug and Distributor ignition systems and determine necessary action for repair.

Assessment Method: Locally developed exams
Performance Criteria: 70% of students pass with a minimum of 70% correct

Assessment Method: Performance appraisals
Performance Criteria: Score 2 on a rubric 0-4

Assessment Method: Simulations
Performance Criteria: Score 2 on a rubric 0-4

Fuel injection system diagnosis
Diagnose malfunctions of Port Fuel Injection systems and determine necessary action for repair.

Assessment Method: Locally developed exams
Performance Criteria: 70% of students pass with a minimum of 70% correct

Assessment Method: Performance appraisals
Performance Criteria: Score 2 on a rubric 0-4

Assessment Method: Simulations
Performance Criteria: Score 2 on a rubric 0-4

Outline:

Strategy-based diagnosis
Oscilloscope usage
Current ramping
Sensor diagnosis
Fuel delivery and fuel injection diagnosis
Ignition theory, operation and diagnosis
Emission system diagnosis