

Master Syllabus

AUT 1115 - Automotive Engine Performance I

Division: Science, Mathematics and Engineering

Department: Automotive Technology

Credit Hour Total: 4.0

Lecture Hrs: 2.0 **Lab Hrs:** 6.0

Prerequisite(s): AUT 1114

Date Revised: June 2014

Course Description:

Operation and service of fuel injection systems. Testing and evaluation of emission controls, on-board diagnostic systems and engine condition. Basic hand tools required. Two classroom, six lab hours per week.

General Education Outcomes:

- ▣ Critical Thinking/Problem Solving Competency
- ▣ Computer Literacy Competency
- ▣ Information Literacy Competency

Course Outcomes:

Fuel system integrity and engine mechanical condition

Test, evaluate, and determine fuel system condition and engine mechanical condition utilizing established tools, equipment and methods.

Assessment Method: Behavioral observations

Performance Criteria: Students must earn a minimum score of 75% on assigned laboratory activities.

Assessment Method: Locally developed exams

Performance Criteria: Students must earn a minimum score of 75% on assigned laboratory activities.

Fuel injection systems; input and output systems

Identify, describe, and explain the theory of operation for gasoline fuel injection systems, input and output circuits.

Assessment Method: Behavioral observations

Performance Criteria: Students will perform work in a laboratory setting and achieve a minimum 75% score on lab sheets.

Assessment Method: Locally developed exams

Performance Criteria: Students must earn an average score of 70% on quizzes and exams.

Assessment Method: Performance appraisals

Performance Criteria: Students must earn a minimum score of 70% in a hands-on timed exam.

Tailpipe emissions

Utilize 5-gas emission testing equipment to test and analyze tailpipe emissions.

Assessment Method: Locally developed exams

Performance Criteria: Students must earn an average score of 70% on quizzes and exams.

Assessment Method: Performance appraisals

Performance Criteria: Students must earn a minimum score of 70% in a hands-on timed exam.

Emission control devices and systems

Test all emission control devices, including EGR, PCV, AIR, 3-way catalyst, cam phasers, and evaporative systems.

Assessment Method: Behavioral observations

Performance Criteria: Students must earn a minimum score of 75% on assigned laboratory activities.

Assessment Method: Locally developed exams

Performance Criteria: Students must earn an average score of 70% on quizzes and exams.

Computer scan tools

Demonstrate the ability to utilize all engine performance applications of common computer scan tools.

Assessment Method: Locally developed exams

Performance Criteria: Students must earn an average score of 70% on quizzes and exams.

Assessment Method: Performance appraisals

Performance Criteria: Students must demonstrate competency in a hands-on exam with a score of 70% or higher.

Outline:

Fuel system and engine mechanical integrity Gasoline and alternative fuels Emission control systems Computer scan diagnostics Fuel injection theory of operation Sensor and output circuits Computerized fuel injection service