

SYLLABUS

REVISED Fall 2012

CURRICULA IN WHICH COURSE IS TAUGHT: Automotive Analysis and Repair

COURSE NUMBER/TITLE: AUT 121-01 Automotive Fuel Systems I

DIVISION: Business & Engineering Technologies

TEXTBOOK: Automotive Fuel & Emissions

CREDIT HOURS: 4 **HOURS/WEEK LECTURE:** 3 **HOURS/WEEK LAB:** 3

LEC/LAB COMB: 6

I. CATALOG DESCRIPTION:

Introduces automotive fuels, fuel tanks, fuel lines, fuel gauges, fuel filtration devices, fuel pump systems, air filtration systems, and carburetion systems. Includes the basic physics required to understand these systems.

II. RELATIONSHIP OF THE COURSE TO CURRICULA OBJECTIVES IN WHICH IT IS TAUGHT:

Students will:

- I. Demonstrate technical competencies and skills in automotive engine performance.
- II. Demonstrate punctuality and reliability acceptable to the automotive repair industry.
- III. Demonstrate an understanding of the economic costs of automotive vehicle repair.
- IV. Use safety equipment and procedures required for the operations being performed.
- V. Read and interpret technical information required for projects and assignments.
- VI. Demonstrate and maintain a clean, orderly, safe and attractive work place and maintain a personal appearance that will enhance that work place.

III. REQUIRED BACKGROUND:

No previous courses required

Course textbook must be available for use and study

A basic hand tool set must be available to complete assigned lab projects

IV. COURSE CONTENT:

Automotive fuels

Basic physics principles and terminology

Fuel storage and delivery systems

Fuel injection design, operation, and systems

Air cleaner and heating systems

Fuel delivery system testing

Fuel tank and gauge system servicing

V. LEARNER OUTCOMES:

EVALUATED BY WRITTEN TESTS AND PROJECTS (T or F, short answer, multiple choice)

1. List the types and qualities of fuel
2. Identify parts of the fuel distribution system
3. Identify principles of gasoline combustion
4. Identify parts of the evaporative control system
5. Identify basic measurements of pressure and vacuum
6. Identify automotive pollutants
7. Identify fuel injector types
8. Identify injection systems
9. Identify fuel saving methods and construction
10. Identify advantages and disadvantages of alternative fuel systems

VI. Evaluation EVALUATED BY SHOP PRACTICES (Shop instructor observation)

1. Diagnosis fuel leaks, replace or repair as necessary
2. Test and correct faulty fuel gauge system
3. Test fuel delivery pressure and volume
4. Replace air filtration units
5. Replace Fuel injectors
6. Adjust engine timing and compression testing
7. Diagnose and replace fuel pumps
8. Diagnose drive ability problems
9. Diagnose poor gas mileage problems
- 10. 75% of the students will be able to complete these assignments**

VII: The Following General Education Objectives Will Be Addressed in This Course:

Communication
Learning Skills
Critical Thinking
Interpersonal Skills and Human Relations
Understanding Science and Technology