J. Sargeant Reynolds Community College
Course Content Summary

Course Prefix and Number: AUT 126 **Credits:** 5

Course Title: Automotive Fuel and Ignition Systems

Course Description: Studies automobile ignition and fuel systems and their function in operation of the engine. Includes carburetors, fuel pumps, ignition systems, troubleshooting, engine testing and adjustment, and tune-up. Prerequisite: AUT 242. Lecture 4 hours. Laboratory 3 hours. Total 7 hours per week.

General Course Purpose: To examine fuel and ignition system operational principles, components, and their function in the operation of internal combustion engines. Safety will be emphasized.

Course Prerequisites and Co-requisites:
Prerequisite: AUT 242

Course Objectives:
Upon completing the course, the student will be able to
a. Describe the operating principles of carburetion, fuel injection, and ignition systems;
b. Describe the component parts of automotive fuel and ignition systems and their specific functions;
c. Describe the carburetor and ignition circuits and their operating functions;
d. Identify the defects in automotive fuel and ignition systems, their cause, and how they affect engine operation;
e. Demonstrate testing and trouble-shooting of fuel and ignition systems and the proper use of test equipment; and
f. Analyze fuel system defects and determine the extent of repairs and adjustments necessary to correct deficiencies.

Major Topics to Be Included:
a. Basic internal combustion engine theories of operation
b. Safety practices, special service tools and equipment
c. Computers and input sensors
d. Distributor and electronic ignition systems
e. Fuel tanks, lines, filters, and pumps
f. Computer-controlled carburetors
g. Electronic fuel injection
h. Scan testers, digital storage oscilloscopes, and on-board diagnostics II
i. Emission control systems, part I
j. Body computer systems
k. Fundamentals of carburetion
l. Carburetor diagnosis, service, and repair
m. Fuel injection diagnosis, service, and repair
n. Fuel injection systems
o. Tests and repair for electrical systems
p. Trouble-shooting and tune-up practices, tests, and procedures
q. Contact points and electronic ignition systems
r. Emission controls

Effective Date of Course Content Summary: February 9, 2009