

**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 (including lecture hours, lab hours, total contacts)**

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. 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/Corequisites** (*Entry-level competencies **required** for enrollment*)

**Course Objectives** (Each item should complete the following sentence.)

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
- 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 (Month, Date Year):** February 9, 2009