SYLLABUS

DIVISION: Business & Engineering Technologies REVISED: Fall 2012
CURRICULA IN WHICH COURSE IS TAUGHT: Automotive Analysis and Repair
COURSE NUMBER/TITLE: AUT 211-01 Automotive Systems III
CREDIT HOURS: 4 HOURS/WEEK LECTURE: 3 HOURS/WEEK LAB: 3 LEC/LAB COMB: 6

I. CATALOG DESCRIPTION:

Introduces the practical use of various test equipment units in diagnosing, servicing, and servicing ignition, engine, charging, starting, instrumentation, lighting systems and fuel systems used by the automobile.

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

Students will:

I. Demonstrate technical competencies and skills in automotive electrical systems.
II. Demonstrate technical competencies and skills in automotive engine performance.
III. Demonstrate punctuality and reliability acceptable to the automotive repair industry.
IV. Demonstrate an understanding of the economic costs of automotive vehicle repair.
V. Use safety equipment and procedures required for the operations being performed.
VI. Read and interpret technical information required for the operations being performed.
VII. 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:

Completion of AUT 242 and must be taken in conjunction with AUT 122 or permission by the instructor. Course textbook must be available for use and study. A basic hand tool set must be available and work clothes must be worn to lab. A digital multimeter is required.

IV. COURSE CONTENT:

Electrical system diagnosing using wiring diagrams
Fuel systems testing, repair and diagnosis
Emission system testing, repair and diagnosis
Ignition systems testing, repair and replacement
Lighting systems testing, repair and replacement
Use of modern test equipment and analyzers
Use of computer analyzer
Use of voltmeter, ammeter, ohmmeter and test light
Use of digital multimeters

Theory of operation of computerized fuel control systems

V. LEARNER OUTCOMES:

EVALUATED BY WRITTEN TESTS (problem solving; diagramming; T or F; short answer)

1. Diagram chosen electrical systems.
2. Diagram chosen electronic computer systems.
3. List chosen electronic system parts.
4. List test procedures for automotive systems.
5. List tests produced by a computer diagnostic scanner.
6. Interpret test results produced by computer diagnostic unit.

Program Outcomes:

1. Students will demonstrate the ability to use an automotive scan tool and a multi-meter to retrieve information and diagnose a modern automobile.
2. Students will work in teams to complete the disassembly and reassembly of automotive assemblies in selected course areas.
3. Students will demonstrate the use of precision measurement tools such an outside micrometer and a torque wrench.
4. Students will complete a four assigned lab worksheets on modern automobile systems.
5. Students will successfully complete a Shop Safety Course.

VI. EVALUATION:

BY LABORATORY PRACTICES (Shop instructor observation)

1. Use meters and test light while diagnosing electrical problems.
2. Operate computer diagnostic unit.
3. Replace electrical, engine and fuel components.
4 Use special test units by testing electrical components.
5. Adjust engines by using test equipment units.
6. Diagnose computer engine control systems using scan tools.
7. 75% of 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