

COURSE OUTLINE

Revised By: B. Hughes July, 2007

DEPARTMENT:	Automotive Technology
CURRICULUM:	Automotive Technology
COURSE TITLE:	Engine Computers
COURSE NUMBER:	AUT 140
TYPE OF COURSE:	Vocational Preparatory
COURSE LENGTH:	Normally 3 weeks
CREDIT HOURS:	4
LECTURE HOURS:	15 hours
LAB HOURS:	60 hours
CLASS SIZE:	20 maximum
PREREQUISITES:	MVM 100 (Introduction to Automotive Technology I), MVM 102 (Introduction to Automotive Technology II), AUT 100 (Introduction to Electricity), AUT 102 (Advanced Electrical Systems), AUT 104 (Automotive Electronics), AUT 106 (Basic Power Accessories), AUT 134 Introduction to Drivability), AUT 138 (Advanced Drivability and Fuel Systems), basic math skills, and 9 th grade or higher reading level (as evidence by appropriate placement test scores), and/or instructor permission.

COURSE DESCRIPTION:

Contents include: safety, computer design and operation, computer sensors, computer input switches, computer output switches, computer output solenoids, computer output motors and idle control devices, as well as removal and installation of computer components from vehicles. In addition the function and construction of each component, and their diagnosis and service procedures will be covered. Instruction in safety, environmental awareness, human relations and leadership are taught as an integral part of this unit.

STUDENT LEARNING OUTCOMES ADDRESSED:

1. Critical Thinking – Use problem solving skills to diagnose and repair automotive computer problems. (SLO 4.1)
2. Technology - Proper use and care of automotive computer tools and equipment. (SLO 5.1)

PROGRAM OUTCOMES:

1. Inspect, diagnose, disassemble, repair, replace and service each of the major systems in various types of vehicles. (SLO 4.1)
2. Locate sources, make parts write-ups, calculate costs and explain repair or service. (SLO 2.1, 2.2 & 7.1)
3. Handle customer needs, complaints, questions and special challenges. (SLO 3.1 & 3.2)
4. Access and apply manufacturer's specifications in repair and replacement. (SLO 7.1)
5. Work safely and responsibly within all shop safety and environmental guidelines and standards. (SLO 6.4 & 6.5)
6. Demonstrate ability to pass the ASE test required for NATEF certification. (SLO 1.1, 1.2 & 7.1)
7. Communicate and document service records. (SLO 2.1)
8. Compute costs, time and measurements. (SLO 2.1, 2.2 & 7.1)
9. Work independently and in groups to service, repair, test and maintain vehicles. (SLO 3.1 & 6.3)
10. Use technology to test vehicles. (SLO 5.1)
11. Work with accuracy, dependability, proficiency and in a timely manner, when servicing equipment. (SLO 6.3 & 6.4)

GENERAL COURSE OBJECTIVES:

At the end of the course the student will:

1. Explain and demonstrate safety as it applies to the automotive industry.
2. Explain the design and operation of a computer.
3. Explain the operation and service of computer sensors.
4. Explain the operation and service of computer input switches.
5. Explain the operation and service of computer output switches.
6. Explain the operation and service of computer output solenoids.
7. Explain the operation and service of computer output motors.
8. Explain the operation and service of idle control devices.
9. Demonstrate proficiency in NATEF competencies.

TOPICAL OUTLINE:

APPROX. HOURS

I. Automotive safety	5
II. Computer design and operation	15
III. Computer sensors	15
IV. Computer input switches	5
V. Computer output switches	5
VI. Computer output solenoids	10
VII. Computer output motors	10
VIII. Idle control devices	<u>10</u>
Total	75

REVISED BY: Brian Hughes
DATE: July 29, 2007