COURSE INFORMATION FORM

DISCIPLINE  Automotive Technology
COURSE TITLE  Diagnosis and Repair
CR.HR  4  LECT HR.  2  LAB HR.  4  CLIN/INTERN HR.  _________  CLOCK HR. _______

CATALOG DESCRIPTION

This course employs a lecture/laboratory approach to the use of diagnostic equipment pertaining to drivability issues, network communications, and computerized management of all vehicular systems. This course will concentrate on development of diagnostic processes without published procedures. This course is designed to increase problem solving and critical thinking skills.

PREREQUISITES

Completion of AUTO 100, AUTO 150, AUTO 166, AUTO 172, AUTO 174 (not required for GM ASEP or Ford ASSET students) and AUTO 264.
Concurrent enrollment in or completion of AUTO 272, AUTO 276, and AUTO 278.

EXPECTED STUDENT OUTCOMES IN THE COURSE (ESO)

Upon completion of this course, the student will be able to:

1. Demonstrate the cognitive and manipulative skills necessary to complete assigned tasks.
2. Describe and employ safe work habits, observing both personal safety and a concern for the safety of others.
3. Analyze, diagnose, and determine necessary actions to solve computerized vehicular diagnostic concerns.
4. Apply procedures needed to successfully perform service operations.
5. Employ effective behaviors necessary to successfully work with others.

GENERAL EDUCATION OUTCOMES (ESO)

Specify which general education outcomes, if any, are substantially addressed by the course. Numbers in parentheses identify the Expected Student Outcomes linked to the specific General Education Outcome.
PROGRAM-LEVEL OUTCOMES

CAREER AND TECHNICAL EDUCATION PROGRAM OUTCOMES
Specify which Career and Technical program outcomes, if any, are substantially addressed by the course by completing the “Career and Technical Education template” to show the relationship between course and program outcomes to assessment measures.

1. Students will demonstrate the knowledge necessary to obtain industry recognized certifications.
2. Students will demonstrate or apply knowledge of basic sciences to the practices of automotive technology.
3. Students will demonstrate the knowledge and application of safety rules and regulations.
4. Students will exhibit professional behavior.
5. Students will be able to use mathematics as it pertains to automotive technicians.

CLASS-LEVEL ASSESSMENT MEASURES
Student accomplishment of expected student outcomes may be assessed using the following measures. (Identify which measures are used to assess which outcomes.)

1. Written evaluation (1-4)
2. Oral evaluation (1-5)
3. Performance exams (1-4)
4. Written laboratory assignments (1-5)
Individual instructors may order this outline as fits the needs of their individual courses. In addition, they may place more emphasis on some areas than on others. What is assured is that this particular list is covered in the course. Other topics may be added to a course as the instructor sees fit, and as time and interest allow. An *asterisk can be used to mark an item as optional.

I. Introduction
   A. Review engine mechanical requirements
   B. Engine breathing
   C. Verify engine timing (belt and chain)
   D. Review engine fuel requirements
   E. Review emission controls
   F. Review ignition systems and control systems

II. Ignition system diagnosis
   A. Secondary ignition system review
   B. Primary ignition system requirements and operation
   C. Primary ignition system triggers
   D. Diagnosing ignition primary systems

III. Computer management systems
   A. Review on board diagnostic controls
   B. Network communications
   C. Reprogramming on-board computers
   D. Mode $06

IV. Diagnose engine performance related issues
V. Diagnose module communication issues
VI. Diagnose transmission electronic issues
VII. Diagnose antilock braking system issues
VIII. Diagnose electronic suspension issues
IX. Diagnose variable assist and electronic steering issues
X. Diagnose electronic HVAC issues
XI. No-code diagnosis
XII. Oscilloscopes
XIII. Diesel engine systems
   A. Introduction to diesel fuel systems
   B. Diesel engine control management systems
XIV. Hybrid systems
   A. Hybrid electric vehicle safety
   B. Introduction to hybrid electric vehicles
C. Types of hybrids

XV. *Technical Skills Assessment (TSA)