

# **SYLLABUS**

**DIVISION: Business & Engineering Technologies**

**REVISED: 2012**

**CURRICULA IN WHICH COURSE IS TAUGHT: Automotive Analysis and Repair**

**COURSE NUMBER/TITLE: AUT 230-H1 Introduction to Alternative Fuels and Hybrid Vehicles**

**CREDIT HOURS: 3      Hybrid Course: Students will meet up to one half of their instruction through Blackboard or other media based instruction.**

**I. CATALOG DESCRIPTION:**

Introduces current trends in alternative fueled vehicles. The course includes an overview of current alternative fueled vehicles in production. The theory of operation of different types of hybrid vehicles will be covered. The implications and safety precautions will be included on the current high voltage hybrid vehicle systems

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

Students will:

- I. Understand technical competencies and realize skills in automotive alternative fuel and hybrid systems.
- II. Demonstrate punctuality and reliability completing the course work and relating to the automotive repair industry.
- III. Demonstrate an understanding of the economic costs of different types of automotive propulsion systems.
- IV. Requirements of safety equipment and procedures required for the operations being performed.
- V. Read and interpret technical information required for projects and assignments.

**III. REQUIRED BACKGROUND:**

No previous courses required

Course textbook must be available for use and study

**IV. COURSE CONTENT:**

Automotive alternative fuels

Comparison of current alternative fuels to traditional gasoline and diesel fuel

Fuel storage and delivery systems

Advantages and disadvantages of specific alternative fuels

Hybrid vehicle theory and types

Hybrid vehicle safety issues

Special tools and equipment needed to diagnose and repair alternative vehicles

**V. LEARNER OUTCOMES:**

1. List the types and qualities of alternative fuels
2. List the advantages and/or disadvantages of a particular alternative fuel
3. Describe and identify basic hybrid vehicle parts
4. Describe basic hybrid vehicle theory of operation
5. Describe and identify basic hybrid vehicle parts
6. Describe and identify basic hybrid vehicle safety issues
7. Compare cost factors of alternative fueled vehicles to traditional powered vehicles
8. Identify fuel saving methods and construction
9. Identify advantages and disadvantages of alternative fuel systems
10. Research a particular alternative fuel or hybrid vehicle and present your findings
11. 75% of students will be able to complete these assignments

**VI. Evaluation:**

EVALUATED BY ONLINE QUIZZES, DISCUSSIONS AND PROJECTS (T or F, short answer, multiple choice and classroom presentations)

**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