

Alternative Fueled Vehicles

Automotive Technology Department
College of Applied Sciences and Arts
Southern Illinois University Carbondale @ Truman College

Instructor: Curt Ward
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Class Calendar

Meeting Time: 8:00AM-5:00PM

August 17th/18th
September 7th/8th
October 5th/6st
November 2nd /3rd
November 23rd /24th

Class Location

Truman College Technology Center

Final Exams

Last test given on last day of class.

Course Description:

Study of alternative fuel and energy systems, fuel delivery systems, alternative propulsion systems, and hybrid and alternative fueled propulsion. Study of energy conversion, battery design, fuel cells, and renewable and fossil fuels included. Environmental concerns with current legislative actions will be discussed. Laboratory includes tasks with alternative fueled propulsion. Not for graduate credit.

Course Objectives:

1. Know what alternative fuels are and why they are utilized.
2. Understand gaseous fuel technology in internal combustion applications.
3. Understand electric drive technology in automotive applications.
4. Understand compression ignition internal combustion technology.
5. Understand "Flex-Fuel" technology and the use of alcohol as a fuel.

Topical Outline:

- I. Alternative Fuel Overview
- II. Automotive Emissions Overview
- III. Gaseous Fuels
- IV. Alcohol Based Fuels
- V. Compression Ignition Engines (Diesel)
- VI. Electric Drive

NOTE:

- **Topics listed above may be introduced at various times.**
- **Additional information/handouts may be introduced during class.**

Required Texts:

There is no required textbook for this class.

Article/Research Assignments

Students will be required to complete various research assignments. Students will be given appropriate notice before assignments are due. Assignments may include, but not limited to, researching information on the web or other sources, summarizing information, providing arguments for and/or against information, and presenting information during class. Students will be given credit for completing all aspects of each given assignment. **All assignments turned into the instructor must be word processed.**

Lab Work

This class will include lab activities and all students are expected to participate fully during these times. Laboratory work may consist of specific assignments, live-jobs, instructor assigned work, and multimedia presentations. Lab work may include topics included in other weeks' lessons. This work must be performed in a timely manor to maximize the benefit to the student. Students will be expected to observe all program and shop regulations and participate in maintaining a clean and safe work environment. Lab activities may be graded, or used to determine any "participation points" used to determine a student's final grade. Creation of service procedures or lab write-ups may be included and graded as well.

Grading and Testing

Short quizzes may be given at the instructor's discretion without advance notice to the students. Quizzes cannot be made up. Exams will typically be given on a timetable relative to the completion of a particular segment of course material. Exams will require students to recognize industry terminology, demonstrate solid understanding of course material, and use this ability to process information to solve problems. The majority of the student's grade will be from exam scores.

The total points a student acquires at the end of the class will determine the final class grade. Points accumulated by the student will be the product of:

- Quizzes
- Exams
- Research assignments
- Class Participation/Lab work

Student accumulated points are divided by the total number of points possible to present a percentage score. Deductions for attendance are then taken.

Students will be notified beforehand, for preparation time, to the scheduling of exams. Exams will be administered as needed according to class progress. **Unless prior arrangements have been made with the instructor, any missed exam must be made up on the first day following the absence in which you return to class, outside of class time.** Participation in class discussions and enthusiasm in laboratory work will affect borderline grade situations. The instructor will add the participation grade at his/her discretion based upon their interpretation of the student's attitude and performance.

Students should be aware that texting, sleeping, disrupting the class, and not actively participating in lab activities and discussions will affect their participation grade.

Scholastic standards:

A = 100-90%

B = 89-80%

C = 79-70%

D = 69-60%

F = 59 and below

Attendance Policy

Attendance is required as part of the class grade. **Safety glasses must be available every class period.** Attendance will be taken at the beginning of each class. To change an absence to a tardy, it is the student's responsibility to notify the instructor, during break time or after class, that they are present.

The Automotive Department's attendance policy will be implemented as follows:

- Each absence will result in a 2.5% reduction in the student's final grade.
- Being late for class three (3) times will equal one (1) absence.
- Excessive absences may lead the student to a conference with the Chairperson of the Department of Applied Technologies before rejoining his/her class.

Excused Absence for religious holidays – Students absent from classes because of required observances of major religious holidays will be excused. It is the student's responsibility to notify in advance the instructor of each class that will be missed. Students must also take the responsibility for making up work missed.

Required Student Materials

1. Safety glasses.
2. Notebook paper or laptop for note taking.
3. Access to the internet or libraries for research.

Note – Please notify the instructor as soon as possible of any disability or medical condition that may require additional assistance.

Safety Instructions:

Instructors will provide guidance and direction to students in the classroom in the event of an emergency affecting your location. It is important that you follow these instructions and stay with your instructor during an evacuation or sheltering emergency. If you are located on a military installation, and depending on the type emergency a senior military member may take control of the situation and direct you on the action to take. Please follow their instructions and do as asked. Similarly, if you are at a community college, their security personal may arrive and take control of a situation, please follow their instructions as well.

In case of emergency, **call 911 FROM A CAMPUS PHONE**. If possible, do not use a cell phone to make a 911 call. Be prepared to give the following information:

Nature of the Emergency

Condition of the victim(s)

Location: Truman College Technology Center

Academic Dishonesty:

Students may be subject to disciplinary proceedings resulting in an academic penalty or disciplinary penalty for academic dishonesty. Academic dishonesty includes, but is not limited to, cheating on a test, plagiarism, or collusion.

ADA Statement for Students Requiring Special Accommodations:

As per 504 of the Vocational Rehabilitation Act of 1973 and the American Disabilities Act (ADA) of 1990, if accommodations are needed, inform the instructor or program advisor as soon as possible.

Southern Illinois University
Automotive Technology
Student Information Sheet

PRINT CLEARLY
(please fill out and return to instructor as soon as possible)

Name _____

1. Local Address _____

City _____

Phone #: _____ **E-mail** _____

Past automotive work experience and for how long:

Indicate which of the following applies to you:

Attended auto classes in high school _____

Attended auto classes at a community college _____

What ASE Areas are you certified in? _____

What is your immediate occupational goal upon graduation from SIU?

What is your occupational goal five years after you have completed your education at SIU?

If you have any medical conditions, of which your instructor should be aware, please indicate below:

