SYLLABUS

DATE OF LAST REVIEW: 02/11/2013

CIP CODE: 47.0614

SEMESTER: Departmental Syllabus

COURSE TITLE: Hybrid/ Electric Vehicle Safety for First Responders and Dismantlers

COURSE NUMBER: AHEV0102

CREDIT HOURS: 2

INSTRUCTOR: Departmental Syllabus

OFFICE LOCATION: Departmental Syllabus

OFFICE HOURS: Departmental Syllabus

TELEPHONE: Departmental Syllabus

EMAIL: Departmental Syllabus

KCKCC-issued email accounts are the official means for electronically communicating with our students.

PREREQUISITE(S): None

REQUIRED TEXT AND MATERIALS: Please check with the KCKCC bookstore, http://www.kckccbookstore.com for the required text for your particular class.

COURSE DESCRIPTION:
The student will learn to safely deal with the hybrid electric vehicle in the event of accidents, disassembly and disposal. The course will emphasize the importance of safety due to the deadly nature of the high voltage environment. Students are required to supply their own high voltage class 0 gloves to participate in live lab experiences. For every task in Hybrid Safety for First Responders and Dismantlers, the following safety requirement must be strictly enforced: Comply with personal and environmental safety practices associated with clothing; eye protection; hand tools; power equipment; proper ventilation; and the handling, storage, and disposal of chemicals/materials in accordance with local, state, and federal safety and environmental regulations.
METHOD OF INSTRUCTION:
A variety of instructional methods may be used depending on content area. These include but are not limited to: lecture, multimedia, cooperative/collaborative learning, labs and demonstrations, projects and presentations, speeches, debates, and panels, conferencing, performances, and learning experiences outside the classroom. Methodology will be selected to best meet student needs.

COURSE OUTLINE:
All students must comply with personal and environmental safety practices associated with clothing; eye protection; hand tools; power equipment; proper ventilation; and the handling, storage, and disposal of chemicals/materials in accordance with local, state, and federal safety and environmental regulations.

I. Introduction to Hybrid and Electric Vehicles
   A. Identifying a hybrid
   B. Identifying hybrid components
   C. HEV technologies
II. High voltage electrical safety
    A. Electric shock
    B. Personal Protection Equipment PPE
    C. Electrical isolation
III. High Voltage Vehicle Safety Systems
     A. Hybrid high voltage safety systems
     B. Service disconnect switch systems
     C. Battery safety
     D. Module safety
     E. High voltage cables
     F. Myths
IV. Emergency Procedures
    A. Approaching a damaged vehicle
    B. Fire
    C. Submerged
    D. Extrication
    E. Crushed battery
V. Servicing Damaged HEV’s
   A. Towing
   B. Dismantling HV components
   C. Battery box removal
   D. Damaged battery service
   E. Disposal
VI. Vehicle specific information
    A. Manufacturers procedures for common HEV’s
    B. Manufacturers websites
    C. Keeping up to date
EXPECTED LEARNER OUTCOMES:
A. The student will be able to identify HEV’s basic components
B. The student will be able to describe high voltage electrical safety
C. The student will be able to explain high voltage vehicle safety systems
D. The student will be able to explain emergency procedures
E. The student will be able to explain how to servicing damaged HEV’s
F. The student will be able to demonstrate where to locate vehicle specific information

COURSE COMPETENCIES:

The student will be able to identify HEV’s basic components
1. The student will be able to identify hybrid electric vehicles from non-hybrid vehicles
2. The student will be able to identify basic components on a HEV and EV

The student will be able to describe high voltage electrical safety
3. The student will be able to explain dangers of high voltage
4. The student will be able to describe the use of personal protection equipment for electrical safety

The student will be able to explain high voltage vehicle safety systems
5. The student will be able to explain the safety systems in a HEV
6. The student will be able to demonstrate proper operation of a service disconnect procedure
7. The student will be able to explain high voltage insulation identification

The student will be able to explain emergency procedures
8. The student will be able to explain procedure for approaching a damaged HEV
9. The student will be able to explain additional concerns for fire in an HEV
10. The student will be able to explain additional concerns for extrication in HEV
11. The student will be able to explain additional concerns for a submerged HEV

The student will be able to explain how to servicing damaged HEV’s
12. The student will be able to describe how to safely tow a HEV
13. The student will be able to explain how to dismantling HV components
14. The student will be able to explain how to remove a HV battery box
15. The student will be able to describe what to do with a damaged battery
16. The student will be able to explain proper instruction for disposal of components

The student will be able to demonstrate where to locate vehicle specific information
17. The student will be able to demonstrate where to find updated vehicle specific information

ASSESSMENT OF LEARNER OUTCOMES:
Student progress is evaluated by means that include, but are not limited to, exams, written assignments, and class participation.

SPECIAL NOTES:
This syllabus is subject to change at the discretion of the instructor. Material included is intended to provide an outline of the course and rules that the instructor will adhere to in evaluating the student’s progress. However, this syllabus is not intended to be a legal contract. Questions regarding the syllabus are welcome any time.

Kansas City Kansas Community College is committed to an appreciation of diversity with respect for the differences among the diverse groups comprising our students, faculty, and staff that is free of bigotry and discrimination. Kansas City Kansas Community College is committed to providing a multicultural education and environment that reflects and respects diversity and that seeks to increase understanding.

Kansas City Kansas Community College offers equal educational opportunity to all students as well as serving as an equal opportunity employer for all personnel. Various laws, including Title IX of the Educational Amendments of 1972, require the college’s policy on non-discrimination be administered without regard to race, color, age, sex, religion, national origin, physical handicap, or veteran status and that such policy be made known.

Kansas City Kansas Community College complies with the Americans with Disabilities Act. If you need accommodations due to a documented disability, please contact the Director of the Academic Resource Center, in Rm. 3354 or call at: 288-7670.