SYLLABUS

DATE OF LAST REVIEW: 4/23/2020

CIP CODE: 47.0613

SEMESTER: Departmental Syllabus

COURSE TITLE: Advanced Electrical/Electronic Systems

COURSE NUMBER: DEVT 0220

CREDIT HOURS: 5

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.

PREREQUISITES: Electrical Electronics Systems

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

COURSE DESCRIPTION: This course expands on the knowledge and skills learned in Electrical/Electronics Systems. Electrical systems such as lighting, instrumentation, restraint, communications, and control systems are studied. Servicing and diagnostics are performed utilizing electrical testers, meters, and scan tools. The use of wiring schematics and repair manuals in the diagnosis process is emphasized.

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:

I. Electrical and Electronics Systems
- A. Use appropriate electronic service tool(s) and procedures to diagnose problems.
- B. Diagnose faults in the data bus communications network.

C. Identify electrical/electronic system components and configuration.

II. Battery System

III. Starting System

IV. Charging System

V. Lighting Systems

A. Diagnose causes of brighter-than-normal, intermittent, dim, or no-light operation.

B. Test, replace and aim headlights.

C. Inspect cables, wires, and connectors in the lighting systems.

D. Diagnose faults in tractor-to-trailer multi-wire connector(s) and components.

E. Diagnose faults in switches in exterior lighting systems.

F. Diagnose faults in interior lighting systems.

G. Diagnose faults in switches and related control components/modules of auxiliary lighting circuits.

VI. Instrument Cluster and Driver Information Systems

A. Check gauge and warning indicator operation.

B. Diagnose faults in the sensor/sending units and related components/modules of the instrument cluster, driver information systems and warning systems.

C. Inspect, test, replace and calibrate electronic speedometer, odometer, and tachometer.

VII. Cab and Chassis Electrical Systems

A. Understand operation of safety systems and related circuits.

B. Understand operation of comfort and convenience systems and related circuits.

C. Understand operation of entertainment systems and related circuits.

D. Understand the operation of power inverter and related control components/modules of auxiliary power systems.

E. Diagnose faults in the engine block and engine oil heater(s).

VIII. CAB Safety Equipment

A. Test operation of horns, required decals, seat belts and sleeper restraints, wiper blades, arms, and linkage.

IX. Cab Hardware

A. Inspect and test Cab hardware and related components.

B. Lubricate Cab hardware and related components.

EXPECTED LEARNER OUTCOMES:

A. The student will be able to describe electrical and electronics systems.
B. The student will be able to describe the battery system.
C. The student will be able to describe the starting system.
D. The student will be able to describe the charging system.
E. The student will be able to describe the lighting system.
F. The student will be able to diagnose lighting systems and their related components.
G. The student will be able to describe instrument cluster and driver related systems.
H. The student will be able to diagnose faults in the instrument cluster and related systems.
I. The student will be able to describe Cab and chassis Electrical systems.
J. The student will be able to describe Cab safety equipment.
K. The student will be able to describe Cab hardware.

COURSE COMPETENCIES:
Upon successful completion of this course:

The student will be able to describe electrical and electronics systems.
1. The student will be able to demonstrate proper use of electrical/electronic service tools.
2. The student will be able to identify electronic components.

The student will be able to describe the battery system.
3. The student will be able to demonstrate knowledge of the battery system.

The student will be able to describe the starting system.
4. The student will be able to demonstrate knowledge of the starting system.

The student will be able to describe the charging system.
5. The student will be able to demonstrate knowledge of the charging system.

The student will be able to describe the lighting system.
6. The student will be able to demonstrate knowledge of the lighting system.

The student will be able to diagnose lighting systems and their related components.
7. The student will be able to inspect lighting systems.
8. The student will be able to repair lighting systems.

The student will be able to describe instrument cluster and driver related systems.
9. The student will be able to identify fault warnings.

The student will be able to diagnose faults in the instrument cluster and related systems.
10. The student will be able to identify fault warnings.

The student will be able to describe Cab and chassis Electrical systems.
11. The student will be able to demonstrate knowledge of Cab and chassis electrical systems.

The student will be able to describe Cab safety equipment.
12. The student will be able to identify data link systems.

The student will be able to describe Cab hardware.
13. The student will be able to demonstrate knowledge of Cab hardware.

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.