SYLLABUS

DATE OF LAST REVIEW: 02/2013
CIP CODE: 47.0201
SEMESTER: Departmental Syllabus
COURSE TITLE: Electrical Theory (Electricity & Components) 2
COURSE NUMBER: HVAC0106
CREDIT HOURS: 2
INSTRUCTOR: Departmental Syllabus
OFFICE LOCATION: Departmental Syllabus
OFFICE HOURS: Departmental Syllabus
TELEPHONE: Departmental Syllabus
EMAIL: KCKCC issued email accounts are the official means for electronically communicating with our students.
PREREQUISITE(S): General Safety Math Level 3 Recommended

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

COURSE DESCRIPTION:
This course will cover electrical circuits, Ohm’s Law, series and parallel circuits and electrical power. The course will also cover automatic controls and components, troubleshooting basic controls, and electronic and programmable controls.

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, panels, conferencing, performances, and learning experiences outside the classroom. Methodology will be selected to best meet student needs.
COURSE OUTLINE:
I. Ohm’s Law
II. Characteristics of Series Circuits.
III. Characteristics of Parallel Circuits
IV. Electronic and Programmable Controls
   A. Electronic Controls
   B. Electronic Thermostats
   C. Troubleshooting Electronic Controls.

EXPECTED LEARNER OUTCOMES:
A. The student will be able to describe Ohm’s Law.
B. The student will be able to demonstrate how a capacitor and transformer works.
C. The student will be able to describe an understanding of electronic controls applications.
D. The student will be able to demonstrate an understanding of basic electronic control circuit board.

COURSE COMPETENCIES:
Upon successful completion of this course:

The student will be able to describe Ohm’s Law.
1. The student will be able to demonstrate voltage equals amperage x resistance.
2. The student will be able to demonstrate amperage equals voltage divided by resistance.
3. The student will be able to demonstrate resistance equals voltage divided by amperage.

The student will be able to demonstrate how a capacitor and transformer works.
4. The student will be able to describe how a capacitor takes a voltage through a series of copper wire loops to set-up the out-put voltage.
5. The student will be able to describe how a transformer takes voltage through a series of copper wire loops to step-down the out-put voltage.

The student will be able to demonstrate an understanding of electronic controls applications.
6. The student will be able to explain that electronic controls come in the form of circuit boards.
7. The student will be able to demonstrate how to replace electromechanical controls.
8. The student will be able to describe how controls are use in an operation.
9. The student will be able to describe how controls are used as a safety.
10. The student will be able to describe how controls are used for energy management functions.

The student will be able to demonstrate an understanding of basic electronic control circuit boards.
11. The student will be able to describe how circuit boards can be used to troubleshoot electronic problems.
12. The student will be able to describe how circuit boards can protect electronic components from damage.
13. The student will be able to describe how circuit boards can monitor voltage supplied to a unit.
14. The student will be able to describe how circuit boards can control the sequence of operation of electrical components.

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 at (913) 288-7670 V/TDD.