SYLLABUS

DATE OF LAST REVIEW: 02/2013
CIP CODE: 46.0302
SEMESTER: Departmental Syllabus
COURSE TITLE: Basic Residential Wiring II
COURSE NUMBER: ELET0151
CREDIT HOURS: 4
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): Residential Wiring 1

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

COURSE DESCRIPTION:

This course covers in more details electrical installation, operation, and maintenance for residential wiring. It will repeat some of the information in Residential Wiring 1 and focus on the National Electrical Code as well as wiring, equipment and etc.

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.
I. Introductory Basics
   A. Using the workbooks
   B. Reading Blueprints
   C. Outside reading's
   D. Lab times.
   E. Working drawings.
II. Basic Electricity
   A. Application of Ohm’s Law
   B. Effect of internal Resistance
   C. Wiring Calculations
III. Conductors
   A. Types of conductors size
   B. Conductor Insulation
   C. Ampacity
IV. Methods of Conduit Wiring
   A. Types of Raceway Systems
   B. Methods of Installation
V. Calculating the numbers of Conductors
VI. Branch Circuit Wiring
   A. Calculating occupied floor area.
   B. Calculating minimum number of lighting circuits
   C. Branch circuit wiring methods
   D. Maximum ampacity check.
   E. Over current protection and circuit rating
   F. Energy saving considerations.
VII. Special Purpose Outlets
VIII. Service Entrance Equipment
   A. Electrical service
   B. Conductors
   C. Service distribution panel
   D. Grounding
   E. Types of transformers
   F. Safety in the workplace
   G. Service and Equipment – Commercial
   H. Special requirements
   I. Higher voltages
   J. Three-phase panel boards
   K. Circuit protective devices
EXPECTED LEARNER OUTCOMES:

A. The student will be able to select positions of specialization in commercial wiring.
B. The student will be able to list industries that employ commercial electricians.
C. The student will be able to distinguish between the advantages and disadvantages of a commercial wiring occupation.
D. The student will be able to name areas in which an electrician will be evaluated.
E. The student will be able to define the requirements of licensing.
F. The student will be able to identify National and Local Electrical codes and how they are used.
G. The student will be able to demonstrate the ability to apply Ohm’s Law to various electrical problems.
H. The student will be able to identify electrical standards in commercial wiring.
I. The student will be able to demonstrate the ability to do calculations dealing with branch circuits.
J. The student will be able to demonstrate the ability to calculate general lighting loads.
K. The student will be able to demonstrate the ability to determine volt loss.
L. The student will be able to demonstrate the ability to install different types of lamps.
M. The student will be able to identify types of fuses.
N. The student will be able to identify types of breakers.

CORE COMPETENCIES:
Upon successful completion of this course:

The student will be able to select positions of specialization in the commercial wiring profession.

1. The student will be able to land wires on terminal strips.
2. The student will be able to wire 3-phase motors.
3. The student will be able to bend conduit.
4. The student will be able to wire control circuits
5. The student will be able to wire power circuits.

The student will be able to list industries that employ commercial electricians.

6. The student will be able to determine different industries for their skills.
7. The student will be able to decide on construction or commercial employers for a job.

The student will be able to distinguish between the advantages and disadvantages of a commercial wiring occupation.

8. The student will be able to determine best opportunities based on reputation in commercial wiring.

The student will be able to name areas in which an electrician will be evaluated.

9. The student will be able to determine how effective their skills are by safety and practical skills.
The student will be able to define the requirements of licensing.

10. The student will be able to explain the tests required to pass for Master Electrician.

The student will be able to identify National and Local Electrical codes and how they are used.

11. The student will be able to determine which electrical codes relate to National.
12. The student will be able to determine which electrical codes are Local.

The student will be able to demonstrate the ability to apply Ohm’s Law to various electrical problems.

13. The student will be able to figure power requirements for a circuit.
14. The student will be able to figure resistance in a circuit.
15. The student will be able to figure voltage in a circuit.
16. The student will be able to figure amperage in a circuit.

The student will be able to identify electrical standards in commercial wiring.

17. The student will be able to describe functions of electrical symbols in commercial wiring.

The student will be able to demonstrate the ability to do calculations dealing with branch circuits.

18. The student will be able to explain the power requirements for each branch circuit.

The student will be able to demonstrate the ability to calculate general lighting loads.

19. The student will be able to explain the formula for computing lighting loads.

The student will be able to demonstrate the ability to determine volt loss.

20. The student will be able to determine voltage drop based on length of conductor run.

The student will be able to demonstrate the ability to install different types of lamps.

21. The student will be able to distinguish between halogen versus high intensity lamps.
22. The student will be able to distinguish between medium versus mogul base lamps.

The student will be able to identify types of fuses

23. The student will be able to determine a cartridge fuse.
24. The student will be able to determine a time delay fuse.
25. The student will be able to determine a blade type fuse.

The student will be able to identify types of breakers.

26. The student will be able to determine double pole breakers.
27. The student will be able to determine arc fault circuit breakers.
28. The student will be able to determine ground fault interrupter breakers.
29. The student will be able to determine single pole twin breakers.
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 anytime.

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.