DATE OF LAST REVIEW: 02/2013
CIP CODE: 47.0201
SEMESTER: Departmental Syllabus
COURSE TITLE: Heating (Electric)
COURSE NUMBER: HVAC0225
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): HVAC0101

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 the fundamentals of residential electrical heating and indoor air quality (IAQ). Each system will be studied and discuss as to efficiency, relative purchase cost, operation cost, and troubleshooting problems.

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. Electric Heat
   A. Introduction
   B. Unit Heaters
   C. Central Forced Air Electric Furnaces
   D. Control Circuits for Forced Air Electric Furnaces

EXPECTED LEARNER OUTCOMES:
A. The student will be able to describe an understanding of the efficiency and relative operating cost of electric heat.
B. The student will be able to explain the different types of electric heaters and state their uses.
C. The student will be able to demonstrate how sequencers operate in electric forced-air furnaces.

COURSE COMPETENCIES:
Upon successful completion of this course:

*The student will be able to describe an understanding of the efficiency and relative operating cost of electric heat.*

1. The student will be able to demonstrate a written cost comparison between the gas and electric furnaces.
2. The student will describe calculation of heating needs based on cubic footage.
3. The student will describe elements of heat transfer in calculations.
4. The student will be able to describe the advantages/disadvantages of gas vs electric
5. The student will be able to explain the relationship of kW and btu/h cost.
6. The student will define and describe kW and btu/h cost elements in each system

*The student will be able to explain the different types of electric heaters and state their uses.*

7. The student will be able to describe the theory of radiant heat.
8. The student will explain the concept of convection heat.
9. The student will explain the concept of conduction heat.
10. The student will describe the relationship between the kW kilowatt and the BTU (British thermal unit).

*The student will be able to demonstrate how sequencers operate in electric forced-air furnaces.*

11. The student will be able to describe how the sequencer utilizes a bimetal snap-disc to initiate operation.
12. The student will be able to demonstrate how a volt-meter is used to test a sequencer to determine if the circuit is open or closed.
13. The student will be able to demonstrate that a sequencer is active by heat from the heat-string.
14. The student will describe the use of sequencers to stage elements.

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.