DATE OF LAST REVIEW: 02/2013
CIP CODE: 47.0201
SEMESTER: Departmental Syllabus
COURSE TITLE: Cooling 1
COURSE NUMBER: HVAC0226
CREDIT HOURS: 3
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 the fundamentals of residential cooling. This will include comfort and psychometrics, residential refrigeration applied to air conditioning, and air distribution and balance.

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. Comfort and Psychometrics
   A. Comfort.
   B. Dry Bulb and Wet Bulb Temperatures.
   C. Body Temperature
   D. The Psychometric Chart.

II. The Evaporator.
   A. The A Coil.
   B. The Slant Coil.
   C. The H Coil.
   D. Coil Circuits.

EXPECTED LEARNER OUTCOMES:
A. The student will be able to demonstrate an understanding of the four factors involved in comfort.
B. The student will be able to demonstrate an understanding of psychometrics.
C. The student will be able to demonstrate an understanding of dew point temperature.
D. The student will be able to demonstrate three ways in which heat transfers into a structure.
E. The student will be able to explain refrigeration as applied to air conditioning.
F. The student will be able to explain the different types of evaporator coils.

COURSE COMPETENCIES:
Upon successful completion of this course:

The student will be able to demonstrate an understanding of the four factors involved in comfort.
1. The student will be able to explain the use of dry bulb temperature to evaluate the operation of an air-conditioning system.
2. The student will be able to explain the use of grains of moisture to evaluate the operation of an air-conditioning system.
3. The student will be able to explain the use of moisture in a pound of air to evaluate an air-conditioning system.

The student will be able to explain an understanding of psychometrics.
4. The student will be able to demonstrate using dry bulb, wet bulb, and ambient air to set the proper refrigerant charge in an air condition system.
5. The student will demonstrate use of a wet bulb to determine humidity levels.
6. The student will demonstrate use of a calibrated thermometer.
7. The student will explain how humidity affects comfort levels.
8. The student will explain how humidity affects indoor air quality (IAQ).

The student will be able to explain an understanding of dew point temperature.
9. The student will be able to explain using dew point to achieve the proper comfort level in an air conditioning system.

_The student will be able to demonstrate three ways in which heat transfers into a structure._

10. The student will be able to demonstrate using conduction, convection, and radiation to find the heat loss of any structure.

11. The student will define and describe measurement of heat loss by conduction.

12. The student will define and describe measurement of heat loss by convection.

13. The student will define and describe measurement of heat loss by radiation.

14. The student will describe factors of heat loss such as casements and points of entry.

_The student will be able to explain refrigeration as applied to air conditioning._

15. The student will be able to explain refrigerant-based methods of heat transfer.

16. The student will be able to explain the concept and use of the “place of no concern”.

_The student will be able to explain refrigeration as applied to air conditioning._

17. The student will be able to recognize the different types of evaporator coils.

18. The student will be able to describe and recognize an A coil.

19. The student will be able to describe and recognize an H coil.

20. The student will be able to describe and recognize a slant coil.

21. The student will describe the proper application of each style of coil.

22. The student will describe the safety and efficiency of each type of coil.

**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.