SYLLABUS

DATE OF LAST REVIEW: 02/2013
CIP CODE: 47.0201
SEMESTER: Departmental Syllabus
COURSE TITLE: Refrigeration System Components 1
COURSE NUMBER: HVAC0103
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.

PREREQUISITES: 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 is an introduction to refrigeration and system components. This course will cover refrigerants, refrigeration process, pressure and temperature relationship, refrigeration components (evaporator, compressor, condenser, and refrigerant metering devices), pumping characteristics, and plotting the refrigerant cycle.

METHOD OF INSTRUCTION:
A variety of instructional methods may be used depending on content area. They may include but are not limited to lecture, multimedia, cooperative/collaborative learning, demonstrations, labs, on-the-job, internships, and other learning experiences outside the classroom. Methodology will be selected to best meet student needs.

COURSE OUTLINE:
I. Evaporators and the Refrigeration System
   A. Refrigeration
   B. Temperature Ranges of Refrigeration
      1. High-temperature applications
      2. Medium-temperature applications
      3. Low-temperature applications
   C. The Evaporator

II. Special Refrigeration System Components
   A. The Four Basic Components
      1. Compressor
      2. Condenser
      3. Evaporator
      4. Expansion device

EXPECTED LEARNER OUTCOMES:

A. The student will be able to define high, medium, and low temperature refrigeration
B. The student will be able to identify different types of evaporators
C. The student will be able to demonstrate the purpose of a refrigeration condenser
D. The student will be able to demonstrate an understanding of expansion devices

COURSE COMPETENCIES:

Upon successful completion of this course:

The student will be able to define high, medium, and low temperature refrigeration

1. The student will be able to define and work with high refrigeration (temperatures are -40 F or below)
2. The student will be able to define and work with medium refrigeration temperatures to 0 F and low temperature refrigeration (temperatures are 40 F and above.)
3. The student will be able to define and work with low temperature refrigeration (temperatures are 40 F and above.)

The student will be able to identify different types of evaporators

4. The student will be able to describe Bare pipe evaporator and use (commercial)
5. The student will be able to describe Forced draft evaporator and use (residential)
6. The student will be able to describe Stamped evaporators and use (residential refrigeration)
7. The student will be able to describe finned evaporators and use (residential cooling)

The student will be able to demonstrate the purpose of a refrigeration condenser

8. The student will verbalize understanding safety in pressurized systems.
9. The student will verbalize understanding safety in electrically powered systems.
10. The student will be able to safely clean and service the condensing coil
11. The student will be able to check the charge of the condenser coil.

The student will be able to demonstrate an understanding of expansion devices

12. The student will demonstrate proper safe use of metering devices
13. The student will demonstrate proficiency in metering refrigerant charge.
14. The student will demonstrate the ability to adjust the operation of an expansion device
15. The student will select the proper expansion device to be used in a low-temp system
16. The student will inspect the expansion valve sensing bulb and be ensure that it is fastened properly to the line

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.

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