DATE OF LAST REVIEW: 02/2013
CIP CODE: 47.0201
SEMESTER: Departmental Syllabus
COURSE TITLE: Refrigeration System Components 2
COURSE NUMBER: HVAC0104
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: None

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 potting 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. Types of Evaporators
   A. Bare-pipe evaporator
   B. Forced-draft evaporator
   C. Stamped evaporator
   D. Finned evaporator

II. Compressors
   A. Function of the Compressor
   B. Types of Compressors
      1. Reciprocating Compressors
      2. Fully Welded Hermetic Compressors
      3. Serviceable Hermetic Compressors
      4. Open Drive Compressors
      5. Belt Drive Compressors
      6. Direct Drive Compressors
      7. The Rotary Screw Compressor
   C. Reciprocating Compressor Components
      1. The Crankshaft
      2. Connecting Rods
      3. The Piston
      4. Refrigerant Cylinder Valves
      5. The Valve Plate
      6. The Head of Compressor

EXPECTED LEARNER OUTCOMES:
A. The student will be able to identify different types of evaporators.
B. The student will be able to demonstrate the function of a compressor system.
C. The student will be able to demonstrate an understanding of a reciprocating and rotary compressor.
D. The student will be able to demonstrate the different types of compressors.

COURSE COMPETENCIES:
Upon successful completion of this course.

The student will be able to identify different types of evaporators.
1. The student will be able to demonstrate the Bare-pipe evaporator.
2. The student will be able to demonstrate a forced-draft evaporator.
3. The student will be able to demonstrate a stamped evaporator.
4. The student will be able to demonstrate a finned evaporator.

The student will be able to demonstrate the function of a compressor system.
5. The student will be able to demonstrate compress refrigerant gases.
6. The student will be able to demonstrate how to create a high pressure.
7. The student will be able to demonstrate how to maintain refrigerant flow.

8. The student will be able to demonstrate an understanding of a reciprocating and rotary compressor.
9. The student will be able to demonstrate that a reciprocating compressor has pistons, rods, valves, crankshaft, and a valve plate. Used mostly in residential applications.
10. The student will be able to demonstrate that a rotary compressor has rotors, vanes, valves, crankshaft, and screws. Used mostly in commercial applications.

11. The student will be able to demonstrate the different types of compressors.
12. The student will be able to demonstrate reciprocating Compressors.
13. The student will be able to demonstrate a fully Welded Hermetic Compressors.
14. The student will be able to demonstrate serviceable Hermetic Compressors.
15. The student will be able to demonstrate open Drive Compressors.
16. The student will be able to demonstrate belt Drive Compressors.
17. The student will be able to demonstrate direct Drive Compressors
18. The student will be able to demonstrate Rotary Screw Compressor.

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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