DATE OF LAST REVIEW: 02/2013

CIP CODE: 47.0106

SEMESTER: Departmental Syllabus

COURSE TITLE: Commercial Walk-in/Reach-in Freezers/Coolers

COURSE NUMBER: MAPR0235

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.

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 instructs students in techniques to disassemble and identify components, explain operation, trace circuits, diagnose and repair as needed several makes of commercial walk-ins, reach-in freezers/coolers. By learning to trace circuits using wiring diagrams and be able to identify, explain the operation, diagnose and repair various and different types of controls students learn proficiency in this line of work. Customer service, repair order write-up, service and parts manual usage, parts ordering and follow through will be discussed and practiced. This course will also teach proper load calculating for commercial walk-in design.

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, and panels, conferencing, performances, and learning experiences outside the classroom. Methodology will be selected to best meet student needs.

COURSE OUTLINE:

I. Reach-in Units
   A. Sequence of Operations
   B. Air Flow
   C. Component Function
II. Walk-in Units
   A. Sequence of Operations
   B. Air Flow
   C. Component Function
   D. Defrost Cycle
   E. Door Systems
   F. General Maintenance

III. Schematics
   A. Reach-in Units
   B. Walk-in Units

IV. Competency Evaluations

EXPECTED LEARNER OUTCOMES:
A. The student will be able to draw the basic refrigerant system, labeling components, pipes and wires.
B. The student will be able to install/replace refrigeration system major components
C. The student will be able to measure and calculate system/compressor efficiency.
D. The student will be able to examine tubing project joints at 100 psig and test for leaks.
E. The student will be able to test and evaluate temperatures, pressures and superheat of an operating refrigeration unit.
F. The student will be able to evacuate and charge basic refrigeration systems.
G. The student will be able to diagnose electrical failures throughout the control functions of the unit.
H. The student will be able to diagnose electrical failures of load devices.
I. The student will be able to diagnose electrical failures defrost circuits
J. The student will be able to recover refrigerant from a sealed system.

COURSE COMPETENCIES:

The student will be able to draw the basic refrigerant system, labeling components, pipes and wires.
1. The student will be able to draw the basic refrigerant system, labeling components, pipes and wires.

The student will be able to install/replace refrigeration system major components.
2. The student will be able to replace one major sealed system component: compressor, evaporator coil, metering device, condenser coil, pump down solenoid, and thermal expansion valve.

The student will be able to measure and calculate system/compressor efficiency.
3. The student will be able to measure and calculate system/compressor efficiency.

The student will be able to examine tubing project joints at 100 psig and test for leaks.
4. The student will be able to observe safe practices.
5. The student will be able to adjust system pressure to 100psi.
6. The student will be able to check joints with soap bubble solution.

The student will be able to test and evaluate temperatures, pressures and superheat of an operating refrigeration unit.
7. The student will be able to test and evaluate temperatures, pressures and superheat of an operating refrigeration unit.

The student will be able to evacuate and charge basic refrigeration systems.
8. The student will be able to properly access sealed system.
9. The student will be able to properly connect refrigerant gauges.
10. The student will be able to evacuate system with a vacuum pump.
11. The student will be able to properly charge system by volume and weight.
12. The student will be able to operate king valve.

The student will be able to diagnose electrical failures throughout the control functions of the unit.

13. The student will be able to diagnose electrical failures of control circuit board.
14. The student will be able to diagnose electrical failures of cold control thermostat.
15. The student will be able to diagnose electrical failures of compressor cutout.

The student will be able to diagnose electrical failures of load devices.

16. The student will be able to diagnose electrical failures of compressor.
17. The student will be able to diagnose electrical failures of condenser fan motor.
18. The student will be able to diagnose electrical failures of evaporator fan motor.

The student will be able to diagnose electrical failures of defrost circuits.

19. The student will be able to diagnose electrical failures of defrost heater.
20. The student will be able to diagnose electrical failures of defrost terminator.
21. The student will be able to diagnose electrical failures of defrost timer.

The student will be able to recover refrigerant from a sealed system.

22. The student will be able to observe safe practices.
23. The student will be able to observe EPA standards and practices.
24. The student will be able to operate recovery equipment.

ASSESSMENT OF LEARNER OUTCOMES:
Assessment methods may include, but are not limited to, the following: Homework, Assignments, Quizzes, Class Participation, Chapter Tests, and Final Exam. The grading scale and the process for calculating the course grades are to be determined by the individual instructors. This information will be included in each instructor’s syllabus.

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.

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