

COURSE SYLLABUS

LAST REVIEW	Fall 2022
COURSE TITLE	Refrigeration 1
COURSE NUMBER	HVAC 0228
DIVISION	Career and Technical Education
DEPARTMENT	HVAC
CIP CODE	47.0201
CREDIT HOURS	3
CONTACT HOURS/WEEK	Class: 1 Lab: 4
PREREQUISITES	HVAC 0100

COURSE DESCRIPTION

This course will introduce students to domestic refrigerators. The course will begin with a brief description of the refrigeration process and proceed with various types of evaporators and evaporator defrosts.

PROGRAM ALIGNMENT

This course is part of a program aligned through the Kansas Board of Regents and Technical Education Authority. For more information, please visit:

https://kansasregents.org/workforce_development/program-alignment

PROGRAM LEARNING OUTCOMES

1. The student will be able to demonstrate the ability to perform HVAC procedures in a safe manner
2. The student will be able to classify the different needs of equipment and summarize a solution.
3. The student will be able to exhibit a high level of professionalism including appropriate dress, attendance, communication skills and other soft skills necessary.

TEXTBOOKS

<http://kckccbookstore.com/>

METHODS 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. Application of Refrigeration Systems
 - A. Application Decisions
 - B. Remote Condensing Unit Equipment
 - C. Multiple Evaporators and Single Compressor Applications
 - D. Walk In Refrigeration
 - E. Refrigeration Piping
 - F. Ice Making Equipment
 - G. Defrost
 - H. Condensate Removal

COURSE LEARNING OUTCOMES AND COMPETENCIES

Upon successful completion of this course, the student will:

- A. Demonstrate an understanding of the different types of display equipment.
 - 1. Describe the chest display unit.
 - 2. Describe the upright display unit.
 - 3. Describe the open-air display unit.
 - 4. Explain if closed; are doors single, double, triple pane, or metal.
 - 5. Demonstrate a package or split-system.
- B. Demonstrate an understanding of remote condensing application
 - 6. Demonstrate knowledge of mechanical rooms, roof top units, basement locations for condensing units.
- C. Demonstrate an understanding of mullion heat.
 - 7. Demonstrate the electrical rods that generate heat for defrost.
 - 8. Demonstrate the used in residential refrigerators and open cases displays.
 - 9. Explain the operation of a timed control device.
- D. Demonstrate an understanding of various defrost methods.
 - 10. Explain hot gas defrost.
 - 11. Demonstrate a mullion defrost element.
 - 12. Demonstrate a timed defrost cycle.
 - 13. Explain the temperature defrost cycle.
- E. Discuss walk in refrigeration applications.
 - 14. Demonstrate the walk in type of freezers.
 - 15. Demonstrate the walk in type of coolers.
 - 16. Explain the walk in type of chillers.

- F. Demonstrate an understanding of ice making equipment.
 - 17. Explain production of ice flakes.
 - 18. Demonstrate production of ice cubes.
 - 19. Explain production of crush ice.
 - 20. Explain production of block ice.
 - 21. Explain production of snow ice.

ASSESSMENT OF COURSE LEARNING OUTCOMES AND COMPETENCIES

Student progress is evaluated through both formative and summative assessment methods. Specific details may be found in the instructor's course information document.

COLLEGE POLICIES AND PROCEDURES

Student Handbook

<https://www.kckcc.edu/files/docs/student-resources/student-handbook-and-code-of-conduct.pdf>

College Catalog

<https://www.kckcc.edu/academics/catalog/index.html>

College Policies and Statements

<https://www.kckcc.edu/about/policies-statements/index.html>

Accessibility and Accommodations

<https://www.kckcc.edu/academics/resources/student-accessibility-support-services/index.html>.