

COURSE SYLLABUS

LAST REVIEW	Fall 2022
COURSE TITLE	Refrigeration Theory 1
COURSE NUMBER	HVAC 0102
DIVISION	Career and Technical Education
DEPARTMENT	HVAC
CIP CODE	47.0201
CREDIT HOURS	1
CONTACT HOURS/WEEK	Class: 1 Lab:
PREREQUISITES	None
COURSE PLACEMENT	None

COURSE DESCRIPTION

This part of this course will cover basic safety, shop safety, equipment safety, tool safety, and electrical safety.

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. Heat
 - A. The use of heat
 - B. Solder
 - C. Very hot weather
- II. Cold
 - A. Cold weather
 - B. Liquid refrigerant
- III. Refrigerants in your breathing space
 - A. Vapors
 - B. Leak detectors
 - C. ASHRAE
- IV. Tools
 - A. Power
 - B. Hand
- V. Fire extinguishers
 - A. Chemicals
 - B. Water

COURSE LEARNING OUTCOMES AND COMPETENCIES

Upon successful completion of this course, the student will:

- A. Demonstrate the proper and safe use of hand tools.
 - 1. Pass a competency test on use and handling of oxygen/acetylene torches.
 - 2. Demonstrate proper and safe use of screwdrivers and nut-drivers.
 - 3. Demonstrate proper and safe use of air condition gages.
 - 4. Demonstrate ladder safety class. OSHA 10
- B. Demonstrate the proper use of and location of fire extinguishers.
 - 5. Demonstrate the location of fire extinguishers and fire exit doors.
 - 6. Explain the fire triangle: Fuel, Heat, Oxygen.
 - 7. Explain the use of fire extinguishers:
 - 8. Explain the use of pressurized water extinguishers.
 - 9. Explain the use of Carbon Dioxide, CO₂ extinguishers.
 - 10. Explain the use of Dry Chemical extinguishers.
 - 11. Explain the use of Foam extinguishers.
- C. Demonstrate the proper use and safety of power tools.

12. Demonstrate the safe use of drills, cordless drills, recovery pumps, voltmeter and vacuum pump.
 13. Demonstrate the proper use of electric heat gun.
 14. Demonstrate the proper use of programmable charging scale.
- D. List the rules for personal safety.
15. Demonstrate if you turn it on, turn it off.
 16. Demonstrate if you unlock it, lock it.
 17. Demonstrate if you break it, repair it.
 17. Demonstrate if you can't fix it, call someone who can.
 18. Demonstrate if you borrow it, return it.
 19. Demonstrate if you use it, take care of it.
 20. Demonstrate if you make a mess, clean it up.
 21. Demonstrate if you don't know how to operate it, leave it alone.
 22. Demonstrate if it doesn't concern you, mind your own business.

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>.