### **COURSE SYLLABUS**

**LAST REVIEW** Fall 2022

COURSE TITLE Special Projects 1

COURSE NUMBER HVAC 0230

**DIVISION** Career and Technical Education

**DEPARTMENT** HVAC

**CIP CODE** 47.0201

**CREDIT HOURS** 2

CONTACT HOURS/WEEK Class: Lab: 4

**PREREQUISITES** HVAC 0100, HVAC 0226, HVAC 0228, HVAC 0225, HVAC 0224,

HVAC 0232, HVAC 0102, HVAC 0106, HVAC 0203, HVAC 0204,

HVAC 0103, HVAC 0105.

#### **COURSE DESCRIPTION**

This course gives students hands on experience in working with customers on outside projects under the supervision of an instructor.

### 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. Perform a winter tune-up on a residential furnace.
  - A. Perform 14 service checks.
  - B. Perform 3 safety checks.
- II. Perform a summer tune-up on a residential air condition.
  - A. Perform 10 service checks.
  - B. Perform 2 safety checks.

## **COURSE LEARNING OUTCOMES AND COMPETENCIES**

Upon successful completion of this course, the student will:

- A. Describe the value of performing a winter tune-up.
  - 1. Demonstrate safe operation of the furnace.
  - 2. Explain how a tune-up saves money.
  - 3. Demonstrate how to find problems before they break down.
  - 4. Explain how a tune-up provides more efficient heat.
  - 5. Explain how a tune-up will prolong the life of the furnace.
  - 6. Demonstrate how to check the carbon monoxide (CO) levels.
  - 7. Explain the dangers of carbon monoxide (CO) poisoning.
- B. Demonstrate the steps to be performed in a winter tune-up.
  - 8. Demonstrate how to check for carbon monoxide.
  - 9. Demonstrate how to check electrical connections and safety,
  - 10. Demonstrate how to check for the proper temperature split.
  - 11. Demonstrate how to check the flue for proper venting.
  - 12. Demonstrate how to oil the blower motor.
  - 13. Demonstrate how to check the gas pressure.
  - 14. Demonstrate how to change the air filters.
- C. Demonstrate the value of performing a summer tune-up.
  - 15. Demonstrate how cleaning the coil will allow better air flow.
  - 16. Demonstrate how checking refrigerant charge will allow a system to cool better.
  - 17. Demonstrate how a tune-up saves money.
  - 18. Demonstrate how a tune-up prevents break downs.
  - 19. Demonstrate how a tune-up extends the life of the system.
  - 20. Explain how a well tune system will dehumidify better.
  - 21. Explain how a well tune system will create better air quality (IAQ) in the structure.
- D. Demonstrate the steps to be performed in a summer tune-up.

- 22. Demonstrate how checking the refrigerant charge, by using the super-heat method.
- 23. Demonstrate how to clean the outside coil with water or coil cleaner if needed.
- 24. Demonstrate how to oil all fan motors.
- 25. Demonstrate how to check temperature drop inside the building.
- 26. Demonstrate how to perform an amp draw on all motors.
- 27. Demonstrate how to clean an evaporator coil with the proper coil cleaner.
- 28. Demonstrate the proper customer service skills to perform a summer tune-up

### 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.