# HVAC Technology Course No. 17056 Credit: 0.5

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| --- | --- | --- | --- |
| **Student name:** |  | **Graduation Date:** |  |

Pathways and CIP Codes: **Construction & Design (46.0000) - Construction Strand**; Energy (17.2071); Manufacturing (48.0000) - Maintenance Strand

Course Description: An **application level** course designed to provide students with exposure to and training in the theories, equipment and skills needed to install and maintain HVAC systems. (Prerequisite: 17002/Carpentry.)

Directions:The following competencies are required for full approval of this course. Check the appropriate number to indicate the level of competency reached for learner evaluation.

**RATING SCALE:**

4. Exemplary Achievement: Student possesses outstanding knowledge, skills or professional attitude.

3. Proficient Achievement:Student demonstrates good knowledge, skills or professional attitude. Requires limited supervision.

2. Limited Achievement:Student demonstrates fragmented knowledge, skills or professional attitude. Requires close supervision.

1. Inadequate Achievement:Student lacks knowledge, skills or professional attitude.

0. No Instruction/Training:Student has not received instruction or training in this area.

**Prerequisite:** 17002 General Carpentry 1 or 17062 Mechanical/Electrical/Plumbing Trades (MEP 1)

## Benchmark 0: The following competencies are to be taught within ALL application level courses offered in your school's approved pathway.

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 0.1 | Demonstrate an understanding of industry standards for personal safety including the safe use of tools, equipment, and hazardous materials |  |
| 0.2 | Demonstrate time management skills. |  |
| 0.3 | Create and utilize employment documents including a resume and portfolio. |  |
| 0.4 | Demonstrate job seeking and interview skills. |  |
| 0.5 | Understand and respond to performance reviews. |  |

## Benchmark 1: Heating/ventilation and air conditioning application

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 1.1 | Safely utilize and maintain tools common to the mechanical trades industry. |  |
| 1.2 | Describe the principles of refrigeration and the refrigeration cycle. |  |
| 1.3 | Calculate heating and cooling load requirements for different spaces. |  |
| 1.4 | Interpret HVAC system blueprints and schematics |  |
| 1.5 | Describe various types of heating and cooling systems, including the pros, cons and applications of each. |  |
| 1.6 | Demonstrate basic electrical knowledge of how electrical circuits work and how they are used within the industry. |  |
| 1.7 | Install basic and programmable heat/cool thermostats. |  |
| 1.8 | Describe thermostat wire and identify what each color should be used for. |  |
| 1.9 | Research future trends in “green technology” and alternative refrigerants for the HVAC industry. |  |
| 1.10 | Troubleshoot and repair problems with HVAC systems. |  |
| 1.11 | Correctly measure, cut and join piping/tubing. |  |
| 1.12 | Demonstrate proper soldering techniques. |  |
| 1.13 | Demonstrate ability to maintain appropriate maintenance documentation. |  |
| 1.14 | Charge and troubleshoot refrigeration systems. |  |

I certify that the student has received training in the areas indicated.

Instructor Signature:

For more information, contact:

CTE Pathways Help Desk

(785) 296-4908

[pathwayshelpdesk@ksde.org](mailto:pathwayshelpdesk@ksde.org)



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