



Program Plan

Knox Technical Center

HVACR (Heating, Ventilation, Air Conditioning, Refrigeration)

Knox Technical Center

Coordinator: Lou Ann Shultz

740.393.2933, ex: 1102

Coordinator Office Hours: 8:00am-4:00pm

Preferred Method of Contact: email

308 Martinsburg Road

Mount Vernon, OH 43050

School Phone: 740.393.2933

School Fax: 740.397.1659

Web Site: www.knoxtechnicalcenter.com

School Office Hours: Mon-Thurs 7:30am – 6:00pm

Fri 7:30am – 4:00pm

I. GENERAL INFORMATION

- A. Mission Statement: The mission of the Knox County Career Center Adult Education is to provide cutting-edge programs that prepare adults with career and lifelong learning skills.
- B. Adult Education Director:
Kim Williams
740.393.2933, ext. 1106
kwilliams@knoxcc.org
- C. Disability Accommodations. Any learner needing special accommodation on the basis of any disability must advise the instructor at the beginning of class. All necessary accommodations will be made upon presentation of relevant certification, presented in a timely manner. Learners are also responsible for making contact with the Program Coordinator prior to the start of class. For detailed KCCC Bylaws & Policies pertaining to Reasonable Accommodation, see Section 2260.01-Section 504 – ADA Prohibition Against Discrimination Based on Disability located on the website at www.knoxtechnicalcenter.com.
- D. Equal Opportunity. It is the policy of the Knox County Career Center School District that employment, educational programs, and activities are provided without regard to race, color, national origin, sex or disability. Any learner with a disability should contact the program coordinator. The Board designates the Director as the Title VI, Title IX and Section 504 Coordinator.
- E. Title IV Eligibility. This program has been approved for Title IV funding. Adult learners requesting information about financial assistance should contact Financial Aid Coordinator Amy Thompson.

Program Plan

II. RATIONALE FOR PROGRAM

- Heating, air-conditioning, ventilation and refrigeration (HVACR) mechanics work in any location that equipment is used to control the climate, such as houses, retail stores, offices, hospitals, and plants.
- Employment of heating, air conditioning, and refrigeration mechanics and installers is projected to grow nine percent from 2023 to 2033, much faster than the average for all occupations. (Bureau of Labor Statistics, 8/2025; <https://www.bls.gov/ooh/installation-maintenance-and-repair/heating-air-conditioning-and-refrigeration-mechanics-and-installers.htm>)
- As of August 8, 2025, 335 jobs relating to HVACR within 50 miles of KTC were posted on the Ohio Means Jobs website (www.ohiomeansjobs.com).
- Job opportunities for HVACR technicians are expected to be excellent, particularly for those who have completed training at an accredited technical school. Commercial and residential building construction is expected to drive employment growth. The growing number of sophisticated climate-control systems is also expected to increase demand for qualified heating, air conditioning, and refrigeration mechanics and installers (HVAC technicians).
- Repair and replacement of HVACR systems is a large part of what technicians do. The growing emphasis on energy efficiency and pollution reduction is likely to increase the demand for HVAC technicians as climate-control systems are retrofitted, upgraded, or replaced entirely.
- (<https://www.bls.gov/ooh/installation-maintenance-and-repair/heating-air-conditioning-and-refrigeration-mechanics-and-installers.htm>)
- The vast majority of HVACR technicians work full time, with occasional evening or weekend shifts. During peak heating and cooling seasons, they often work overtime or irregular hours. Although most technicians are employed by construction contractors, about 1 in 10 is self-employed workers who have the ability to set their own schedules. Technicians who service refrigeration, heating, and air conditioning equipment generally have stable employment throughout the year, particularly because a growing number of manufacturers and contractors now provide or even require year-round service contracts. (<https://www.bls.gov/ooh/installation-maintenance-and-repair/heating-air-conditioning-and-refrigeration-mechanics-and-installers.htm>)

III. PROGRAM DESCRIPTION

The HVACR (heating, ventilation, air conditioning, and refrigeration) Technician program will prepare learners for careers as HVACR installers and technicians. The 685-hour program is a performance-based program with no prerequisite courses or certifications required.

IV. PROGRAM GOALS

- Provide sound fundamental skills required to pass EPA Section 608 Certification exam.
- Provide employment opportunities in a variety of residential/light commercial HVACR

Program Plan

occupations

- Stay current with changing technologies by utilizing Advisory Committee from local industry
- Offer quality career-oriented instruction utilizing modern teaching techniques and applications.
- Provide the necessary skills to acquire employment or advance career opportunities in the HVACR field.
- Provide a bridge for career pathways.
- Explore technology of the future.

V. PROGRAM OUTCOMES

After the completion of the HVACR Technician Program, a learner will be able to:

- Demonstrate proper safety practices and procedures while installing, designing, troubleshooting and servicing HVACR systems
- Gain competency in the area of fossil fuel combustion systems found in residential and light commercial buildings
- Demonstrate competency in the area of refrigerant handling
- Understand the importance of good work habits, communication practices, and computation skills
- Demonstrate a high level of ability to access industry technical information on the Web
- Obtain required overall industry competencies in the areas of HVACR
- Demonstrate good team, interpersonal, and customer service skills.
- Obtain and maintain employment as a certified HVACR installer or technician
- Apply acquired knowledge and skill if learner chooses to advance to a higher level of education such as an Associate Degree with an articulated institution.

VI. CREDENTIAL

- Certification Exam: This program will prepare learners to pass the following certification exam:
 - The Environmental Protection Agency's (EPA) Section 608 Certification Exam.

VII. TARGET POPULATION

- Any person 18 years of age and older with high school diploma or GED
- Any person interested in a HVACR career and/or career enhancement within a residential or light commercial environment

VIII. PROGRAM MODEL

- A. 685 hours of instruction (Theory – 280 hours; Laboratory – 405 hours)
- B. See Addendum A for Curriculum Map

Program Plan

IX. ASSESSMENT STRATEGIES

- A. Preassessment Skills Review
 - WorkKeys
- B. Throughout Program
 - Individual module testing – minimum passing score of 75%
- C. Graduation
 - Maintain a 75% or higher per term attendance
 - Maintain 90% attendance per term and overall
 - Successfully complete all course work

X. EVALUATION PLAN TO DETERMINE PROGRAM EFFECTIVENESS

- Follow-up of placement of graduates into HVACR industry to determine employment rate
- Learner evaluation of instructors halfway through program and at end of program
- Learner evaluation of course halfway through program and at end of program
- Meetings with Advisory Committee once a year
- Meetings with Faculty

XI. TRAINING PATHWAYS

- A. A career pathway system is a series of connected educational and training programs and support services that prepare and enable individuals, often while they are working, to secure a job and advance over time to successively higher levels of education and employment in a specific industry/field. Pathway goals are to increase access, awareness, affordability, resources, and alignment for high school students, adult learners, and the current workforce (Thrive, 2009).

The Knox Technical Center Adult HVACR Technician program is an entry-level program designed for learners with little to novice experience in the HVACR field, those who already work in the field and wish to enhance their skills, or those who simply wish to enter a HVACR career pathway.

Prior to admission potential learners must have the following:

- High school diploma or GED
- Completed application form with a \$25 deposit
- Skills Assessment (WorkKeys)

Program Plan

Addendum A



KTC Curriculum Map

Knox Technical Center

HVACR (Heating, Ventilation, Air Conditioning, Refrigeration)

HVACR Course Sequence		Class Hours	Total Laboratory Hours	Total Course Hours
Course #	Course Name			
HV100	Employability		4	4
HV101	Introduction to HVACR <ul style="list-style-type: none"> • Careers in HVACR • Customer Relations • Hand Tools • Fasteners • Working with Cooper Tubing • Working with Pipe • Soldering, Brazing & Flame Cutting • Mathematics for Techs 	70	99	169
HV200	Employability		4	4
HV201	Electrical <ul style="list-style-type: none"> • Basic Electricity, Power Transmission & Circuits, Motors, Electromagnetic Control Devices, Motor Controls 	35	51	86
HV202	Introduction to Refrigeration <ul style="list-style-type: none"> • Thermodynamic Principles, Temps & Pressure, Refrigeration Cycles, Refrigerants, Recovery & Recycling, System Evacuation, Leak Detection & Recharging, Meters & Devices, Valves, Flow Controls & Compressors 	35	55	90
HV300	Employability		4	4
HV301	Air Conditioning <ul style="list-style-type: none"> • Ductwork, Air Flow, Static Pressure Design • Indoor Air Fundamentals • Air Conditioning Systems 	35	51	86
HV302	Heating <ul style="list-style-type: none"> • Heating Systems & Heat Pumps • Energy Management & Conservation 	35	55	90
HV400	Employability		4	4
HV401	Course Review and Check-offs Review for EPA 608 for EPA Universal 608 Exam Career Services Professional Ride-Along	70	70	148
Total Program Hours		280	405	685

Hours in session: 685 total hours

Calendar: Sept. 10, 2025 through June 18, 2026

Revised 09-05-25