



# Frederick Community College

## Building Trades **HVAC**



Carrie Wyrick, Program Manager 240.629.7985 [cwyrick@frederick.edu](mailto:cwyrick@frederick.edu)

### CREDIT TRACK 1: HVAC

Class	Letter of Recognition	Career Certificate	Prerequisites
BLD 101 Introduction to Building Trades	3	3	EN 51 or ESL 97
BLD 108 Duct Design & Installation		3	BLD 109 (also corequisite)
BLD 109 Fundamentals of HVACR	4	4	EN 51 or ESL 97
BLD 110 Controls for HVAC	4	4	BLD 109
BLD 113 Air Conditioning and Heat Pumps		4	BLD 110
BLD 114 Fossil Fuels and Hydronic Heating		4	BLD 110 or BLD 112
BU 274 Customer Relations		3	EN 50A/EN 52 or ESL 95/ESL 99
INTR 102 Internship (Optional)		2	
<b>Total credits</b>	<b>11</b>	<b>25-27</b>	

### CONTINUING EDUCATION CERTIFICATE: HVAC

Class	Continuing Education Certificate	Prerequisites
HVC 121 Fundamentals of HVACR	90 hours	EN 51 or ESL 97
HVC 122 Controls for HVACR	90 hours	HVC 121
HVC 123 Air Conditioning and Heat Pumps	90 hours	HVC 122
HVC 125 Fossil Fuels and Hydronic Heating	90 hours	HVC 122
HVC 140 Duct Design & Installation	90 hours	HVC 121 (also corequisite)
<b>Total Hours</b>	<b>360 hours</b>	

# Building Trades HVAC



## **FCC's HVAC Trades Program**

Frederick Community College offers a tiered set of training options to individuals seeking entry-level employment or career advancement within the HVAC trade. Coursework completed at each tier for a specific trade (known as a "track") may be applied to the next level to acquire additional skills and training.

### **Continuing Education Units (CEUs)**

formal recognition of an individual's completion of a designated program - many professionals are required to earn CEUs to verify ongoing professional development.

### **Continuing Education Certificate - Career Training**

Awarded upon successful completion of four basic 90-hour HVAC courses offering fundamentals, applications and specialized training.

### **Letter of Recognition (LOR) - (11 credits)**

Introduction to the basics of HVAC and includes industry certification in EPA regulations for handling refrigerants. Participant demonstrates basic skills and knowledge required for immediate entry-level employment.

### **Career Certificate - (25-27 credits)**

To further build an individual's knowledge of the HVAC trade incorporating troubleshooting skills on heating and air conditioning equipment, customer relations skills and opportunities for internship. Earned within a specialized discipline, the certificate is often designed for individuals seeking specific skills for entry into the job market.

The college prohibits discrimination against any person on the basis of race, religion, gender, color, national origin, ancestry, age, sexual orientation, marital status, physical or mental disability of otherwise qualified individuals and any other category protected by federal, state or local law. Frederick Community College subscribes to full access to all college facilities as outlined in the Americans with Disabilities Act of 1990 and as amended. The designated coordinator for the college's compliance with Section 504 of the Rehabilitation Act of 1973 and for the Americans with Disabilities Act is Kate Kramer-Jefferson, 301.846.2409.

**Accommodation Statement** Frederick Community College makes every effort to accommodate individuals with disabilities. If you have accommodation needs, please call 301.846.2408. To request a sign language interpreter, please call 301.846.2476 (Voice) or 240.575.2366/866.616.7243 (Videophone). Requests for any accommodation should be made at least five working days prior to attending a scheduled event.

**Gainful employment** For more information about our graduation rates, the median debt of students who completed the program, and other important information, please visit our website at [www.frederick.edu/gainfulemployment](http://www.frederick.edu/gainfulemployment).

### **Program Costs**

Actual costs vary for in-county and out-of-county residents. FCC provides a tuition payment plan for most programs. Scholarship and loan assistance is available for eligible students. Visit us on campus or online at [www.frederick.edu](http://www.frederick.edu) for updated course schedules, tuition and fee information.

### **Mission**

Provide students with a comprehensive mixture of academic and practical training in the areas involved in building trades technology.

### **Goals**

Students will gain general knowledge of equipment and materials and develop skills required to be an entry level employee upon completion of designated programs.

### **Acquiring Industry Knowledge**

Students successfully completing the program will understand:

- The fundamentals of heating, cooling, ventilation, humidity control and basic refrigeration.
- How to identify and use thermostats; pressure, safety and temperature devices; and valves.
- Troubleshooting, installation, service and preventative maintenance techniques for heat pumps and air conditioning units.
- Fuel heating devices, hydronic and forced air equipment.

## **The HVAC Trades Industry**

### **Related Job Titles:**

- Field technician/equipment installer
- HVAC Helper/Apprentice
- Opportunities in sales and estimating

**Job Outlook:** According to the U.S. Bureau of Labor Statistics, employment of heating, ventilation and air conditioning, and refrigeration (HVACR) mechanics and installers is expected to grow 21 percent from 2012 to 2022, faster than average for all occupations. Commercial and residential building construction is fueling employment growth as the construction industry continues to recover from the recent recession. The growing number of sophisticated climate-control systems is expected to increase demand for qualified HVACR technicians. Employment growth is dependent on government policy and changes in the economy.

**Median Wage:** The median annual wage of a fully-trained HVAC technician is \$43,640 per year. Apprentice starting pay is approximately 50% of a fully-trained electrician's annual salary. Wages vary and may increase. Wages vary based on the technician's experience, skill level and industry of employment.

**Description of Work:** HVACR technicians provide optimal air quality in many types of physical structures including homes, businesses, factories, government facilities and more. Work, performed under the supervision of experienced technicians, may include carrying materials, insulating refrigerant lines and cleaning furnaces. With experience, additional assigned tasks may include cutting and soldering pipes and sheet metal and checking electrical and electronic circuits.

## **TRADES & INDUSTRY: HVAC**

### **Opportunities in the Building Trades Industry**

With increasing construction demands fueling the building trades industry, now is the best time to enhance your career and increase your earning potential with affordable professional training.

FCC's Building Trades program provides participants with expert knowledge, high-tech skills and hands-on experience at The Monroe Center, a state-of-the-art college training facility located within minutes of FCC's main campus. Industry experts provide extensive, relevant instruction in classroom and fully-equipped labs.

To best fit the needs of our students, both continuing education (noncredit) and academic (credit) training programs are available at FCC.

FCC's HVAC program prepares students for entry-level positions and apprenticeships. Most HVACR technicians learn their trade in a 3- to 5-year apprenticeship, during which time, apprentices must complete at least 144 hours of technical training and 2,000 hours of paid on-the-job training annually. Several groups, including unions and contractor associations, sponsor apprenticeship programs.

### **Industry Certification and Licensure**

HVACR industry certification exams require varying levels of experience. Technicians with relevant course work and less than 2 years of experience may take "entry-level" certification exams while technicians with 3 or more years experience may take specialized exams. While HVAC licensing requirements vary by state and locality, candidates must pass exams to advance in the HVAC industry. For more information, contact local and state HVAC licensing boards.

**Data Sources:** Bureau of Labor Statistics: [www.bls.gov/ooh](http://www.bls.gov/ooh), Departments of Labor: [www.dol.gov](http://www.dol.gov) and [www.dlir.state.md.us](http://www.dlir.state.md.us)

Contact: **Carrie Wyrick**, • Program Manager **240.629.7985** • [cwyrick@frederick.edu](mailto:cwyrick@frederick.edu)