



## Heating and Cooling Technician (HVAC)

An HVAC (Heating, Ventilation, and Air Conditioning) technician installs, maintains and repairs heating, air conditioning and refrigeration systems. An HVAC technician may specialize in installation or maintenance and repair of the heating/cooling or refrigeration systems. A properly functioning HVAC system helps maintain good indoor air quality and provide climate control and comfort.

Heating, air conditioning, and refrigeration mechanics and installers may work in residential homes, schools, hospitals, office buildings, or factories. Their worksites may be very hot or cold because the heating and cooling systems they must repair may be located inside or on the outside of the building. Working in cramped spaces is very common, and they also may have to work in basements or on rooftops.

Although there may be a slow period between the spring and fall months most climates require heating services in the winter and cooling services in the summer. HVAC technicians also provide preventive maintenance services during the spring and fall months as well as energy audit evaluations and many other services throughout the year. Most technicians work full-time and many are on an on-call basis after work hours and on weekends.

The possibility of this profession becoming obsolete is not anticipated. These are mechanical systems that will not last forever, therefore there will always be a need for repair and service. HVAC technician jobs are fairly insulated from economic fluctuations.

### Indiana Wage Information

	Entry	Median
Hourly Wage	\$15.92	\$20.22

### Job Outlook in Indiana

Long term	16.8 % (increase)
Short Term	3.4 % (increase)

\*Data collected from [hoosierdata.in.gov](http://hoosierdata.in.gov)

### Job Duties

- Adjust system controls to setting recommended by manufacturer
- Assemble, position and mount heating or cooling equipment
- Cut or drill holes in floors, walls, or roof to install equipment, using power saws or drills
- Inspect and test systems to verify system compliance with plans and specifications
- Install auxiliary components to heating-cooling equipment, such as expansion and discharge valves, air ducts, pipes, blowers, dampers, flues and stokers, following blueprints
- Lay out and connect electrical wiring between controls and equipment
- Join pipes or tubing to equipment and to fuel, water, or refrigerant source to form circuit
- Measure, cut, thread, or bend pipe or tubing using pipe fitter's tools
- Repair or replace defective equipment, components, or wiring

## Important Qualities

**Customer-service skills** – must be friendly, polite, and punctual when working in customers' homes and in business offices

**Detail-oriented** – must pay attention to details when installing or repairing equipment

**Dexterity** – must have good hand-eye coordination

**Physical strength** – must be able to lift and support heavy equipment and components

**Time-management skills** – must be able to keep a schedule and complete all necessary repairs or tasks

**Troubleshooting skills** – must be able to identify problems

## Skills and Knowledge

### Technical

- Installing machines, wiring or programs to meet specs
- Determining causes of operating errors
- Repairing machines or systems using needed tools
- Performing routine maintenance on equipment
- Watching gauges and dials to ensure machine is working properly
- Knowledge and prediction of physical principles, laws, their interrelationships and applications

### English Language Arts

- The ability to communicate information and ideas in speaking or writing so others will understand

### Math

- Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications

## Certification and Advancement

Most employers in this occupation require their employees to have a high school diploma or high school equivalent along with specialized training from a technical school or community college. A growing number of HVAC technicians receive postsecondary instruction from technical and trade schools or community colleges that offer programs in heating, air conditioning, and refrigeration.

All HVAC technicians are required to obtain a certification on the proper and safe use of refrigerants from the Environmental Protection Agency. The EPA 608 Technician Certification can be obtained through the EPA or from a training provider.

HVAC technicians may take several different tests that measure their skills. These tests require different levels of experience. Technicians with relevant coursework and less than 2 years of experience may take the "entry-level" certification exams. These exams test basic competency in residential heating and cooling, light commercial heating and cooling, and commercial refrigeration. Technicians can take the exams at technical and trade schools.

As the technician gains ability and experience, the opportunity for higher compensation and advancement improve. After many years in the field many HVAC technicians open their own business.

## How can YOU get involved?

The world of work relies on the foundational skills students acquire in your classrooms and/or programs!

- Know your students' clients' interests and career goals
- Affirm the value of the skills/hobbies students demonstrate both in and outside of the classroom
- Infuse your classroom culture and/or meetings with career-minded activities
- Provide time to make connections between the material learned in adult education or workshops and students' daily lives/career aspirations
- Know the basic job descriptions and training requirements of in-demand occupations in your area
- Know which WorkINdiana programs are available in your region
- Know the processes for referring students to postsecondary or on-the-job training
- Post resources where students can find more information about further education/training and careers

Sources and Further Information:

[www.careerinfonet.org](http://www.careerinfonet.org)

[www.technicianresource.com/hvac-technician](http://www.technicianresource.com/hvac-technician)

[www.bls.gov/ooh/](http://www.bls.gov/ooh/)

[www.careerplanning.about.com/od/occupations/p/HVAC\\_technician.htm](http://www.careerplanning.about.com/od/occupations/p/HVAC_technician.htm)

\*Last Updated July 2016