Environmental Systems Technician/HVAC Installation Technician Apprenticeship

Did you know?*

- Employment is projected to grow as fast as the average.
- Job prospects are expected to be excellent.
- Employers prefer to hire those who have completed technical school training or a formal apprenticeship.
- Apprenticeship period is normally 4 to 5 years in duration.

*Statistics retrieved from the U.S. Bureau of Labor Statistics.

What Does an EST/ HVAC Technician Do?

Environmental Systems (EST) and HVAC Installation Technicians work with heating, air-conditioning and refrigeration systems that consist of many mechanical, electrical, and electronic components, including motors, compressors, pumps, boilers, fans, ducts, pipes, thermostats and switches. In central heating systems, a furnace or boiler heats air that is distributed throughout the building by a system of metal or fiberglass ducts or piping. Technicians must be able to maintain, diagnose, and correct problems throughout the entire system. They may adjust system controls to recommended settings and test the performance of the entire system using special tools and test equipment. The work involves installing ductwork and installing and wiring environmental control systems and testing and balancing air-handling equipment and hydronic and piping systems.

They install, service, and repair heating and air conditioning systems in residences and commercial and industrial establishments.

Tasks:

- EST/HVACTs install and service heating and cooling equipment. Apprentices take courses on topics involved with installation and maintenance of gas, oil, and electric furnaces, maintenance of air conditioning equipment, troubleshooting, pneumatic and digital controls and boiler maintenance.
- Comply with all applicable standards, policies, and procedures, including safety procedures and the maintenance of a clean work area.
- Repair or replace defective equipment, components, or wiring.
- Test electrical circuits and components for continuity, using electrical test equipment.
- Reassemble and test equipment following repairs.
- Inspect and test system to verify system operation in accordance with plans and specifications and to detect and locate malfunctions.
- Discuss heating-cooling system malfunctions with users to isolate problems or to verify that malfunctions have been corrected.
- Record and report all faults, deficiencies, and other unusual occurrences, as well as the time and materials expended on work orders.
- Test pipe or tubing joints and connections for leaks, using pressure gauge or soap-and-water solution.
- Adjust system controls to setting recommended by manufacturer to balance system, using hand tools.
- Basic field installation of heating and cooling systems.

What Are the Working Conditions?

EST/HVACTs may stand and kneel for long periods and lift heavy materials and finished pieces. They are also subject to cuts and burns from soldering and welding, and are required to work at heights with the potential of falls from ladders and scaffolds. They may also work around general dust and fumes and in all types of weather. They usually wear safety glass, hard hats, safety shoes, and hearing protection, but must not wear jewelry or loose-fitting clothing that could easily be caught in a machine. Those performing installation work do considerable bending, lifting, standing, climbing, and squatting, sometimes in confined spaces or awkward positions. EST/HVACTs may work after hours on an emergency basis.

How is the Training Structured?

- 4 year training program
- 8,000 hours on-the-job training
- 144 hours of related instruction per year
- Individual program requirements may vary by sponsor

What are the Application Requirements?

- Applicants must be at least 18 years of age
- High school diploma or equivalent
- Physically able to perform trade
- Valid driver's license and reliable transportation

What Skills Should I Possess?

- **Building and Construction**- Knowledge of materials, methods, and the tools involved in the construction or repair of houses, buildings, or other structures.
- **Mathematics**- Knowledge of arithmetic, algebra, geometry, and their applications.
- **Active Listening**- Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- **Reading Comprehension**- Understanding written sentences and paragraphs in work related documents. Read and understand fairly technical information.
- **Critical Thinking**- Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
- **Dependability**- Job requires being reliable, responsible, dependable, and fulfilling obligations.
- **Initiative**- Job requires a willingness to take on responsibilities and challenges.
- **Manual Dexterity**- The ability to quickly move your hand, your hand together with your arm, or your two hands to grasp, manipulate, or assemble objects.
- **Professional Appearance**- Required to be neat, clean and maintain an overall tidy appearance.
- **Customer Relations**- Ability to work with co-workers and customers. Able to explain services provided and collect fees for these services.
- **Physical Requirements**- Must have the ability to meet physical requirements including stamina, trunk strength, and possess the ability to lift.
- **Near Vision**- The ability to see details at close range (within a few feet of the observer).
- **Oral Comprehension**- The ability to listen to and understand information and ideas presented through spoken words and sentences.
- **Problem Sensitivity**- The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.
- **Visualization**- The ability to imagine how something will look after it is moved around or when its parts are moved or rearranged.

Additional Resources

The United States Bureau of Labor Statistics maintains information on all occupations. For more information on the HVAC trade in the United States, visit:

http://www.bls.gov/ooh/installation-maintenance-and-repair/heating-air-conditioning-and-refrigeration-mechanics-and-installers.htm#tab-1

Who to Contact in Mississippi

For more information on becoming an HVAC Mechanic and Installer contact MCEF at 601-605-2989.