



Worldwide Careers in HVAC

Anyone who has ever come in from the energy-draining heat or warmth-robbing freezing temperatures appreciates the work of HVAC technicians. HVAC (heating, ventilating, and air conditioning), is the control of temperature and humidity within closed areas such as homes and businesses. Air quality, ventilation, and air distribution are important factors when these systems are being installed. They are factored into new building plans and their sizes and uses are what determine the type of heating/air conditioning units to be installed. Building codes and compliance laws factor in as well. Guidelines and compliance efforts are closely monitored and regulated by ASHRAE, ACCA, AMCA, and others.

Opportunities in this field are numerous and available worldwide. Engineers, installers, and maintenance personnel remain in high demand. Varying levels of education, training, and experience play into these occupations.

HVAC engineers are in high demand, but unfortunately, there are simply not enough candidates to meet this demand. In a time when engineering is quickly becoming the most chosen field of study in colleges, the number of engineers choosing to specialize in HVAC is not growing as quickly. With stronger environmental challenges that evolve almost on a daily basis, the need for educated engineers continues to rise. The US Green Building Council's Leadership in Energy and Environmental Design (LEED) rating system continues to be an influence on those seeking environmentally safer and cost-efficient methods for new construction. This is especially important during the design phase and as such, becoming LEED certified is an advantage to those engineering professionals wishing to propel their advancement opportunities. According to LEED, the fastest-growing trend in this industry is machines associated with water source heat pumps or thermal energy transfer systems. These are better for the environment and are cost efficient—two plusses every company wants to hear. The demand for engineers in this field is expected to continue.

HVAC installation personnel are also facing shortages. The intricate workings of how HVAC systems work might be part of the reason technicians tend to steer clear. Still, the income opportunities are higher than average when compared to other similar installers in other fields. These shortages are not exclusive to the US, but are worldwide. Service technicians will more than likely be offered the opportunity to travel to countries during the course of their careers.

Installers ensure units are installed according to compliance agencies' guidelines. They install and ensure circuit breakers are up to code, they run all wiring, they install all ducts and pipes, and they work closely with sheetmetal installers so

that the right wiring and components are compatible with the chosen sheet metal that is being installed. With so many switches, sensors, and control functions that must work and coordinate with the rest of the system it is imperative these systems are installed properly. When they are not installed properly, the ability to troubleshoot becomes a priority. Because of the new ways homes and businesses are constructed and the focus on efficiency and comfort, the role of HVAC takes on an even bigger importance. Consumers simply demand more. Again, with the trends leaning toward more energy-efficient designs, HVAC technicians must remain up-to-date on the changing laws and designs. The Environmental Protection Agency has also tightened its restrictions, thus changes per these new guidelines must be understood and implemented accordingly and on a timely basis.

Of course, there are no shortages of available instructor positions for those who are experienced and have the proper certifications in HVAC. Every topic, from safety issues to the wire sizes, is included in courses that teach HVAC. Safety is the cornerstone of a successful HVAC project. It is weaved through every credible choice curriculum. Instructors report they put an emphasis on basic understanding, especially when it comes to electricity and the rules that apply when dealing with it. One instructor reports teaching the importance, for safety reasons, of using only one hand when testing units. If both hands are used, and the technician is electrocuted, the current will flow to the heart, resulting in an almost sure death. It is with this attention to detail and on the no-one-knows-everything assumption that good instructors base their teachings.

The basic requirements for those wishing to enter HVAC include above-average analytical skills; the ability to remain focused on the task at hand while remaining aware of safety issues; the ability to work in many environments which may include unpredictable weather patterns, small spaces, and other confined areas; proper certifications; the willingness



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to remain informed in an ever-changing industry; and availability for unexpected service calls. If you have these qualifications, this is an excellent field that continues to expand in opportunities. This trade offers unlimited potential for advancement and income opportunities. In fact, many who

began with installation and service positions have chosen to further their educations and are now pursuing degrees as they learn and develop the newer designs via CAD (computer-aided design) and other computer programs.

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