

# HEATING, VENTILATION, AND AIR CONDITION (HVAC)

## Overview

### Program Description

The Heating, Ventilation, and Air Conditioning Program prepares the student with entry-level skills required by employers in this industry.

It is industry-focused, with the student having the opportunity to earn their EPA section 608 certification, NATE (North American Technical Excellence) certification, plus many specialized certifications from ESCO (Energy Service Company). ESCO exams are supported by the Refrigeration Service Engineers Society (RSES), Air Conditioning Contractors of America (ACCA), Gas Appliance Manufacturer's Association (GAMA), Plumbing, Heating and Cooling Contractors Association (PHCC), Heating, Air Conditioning & Refrigeration Distributors International (HARDI) and the Air Conditioning, Heating & Refrigeration Institute (AHRI).

The Heating focus of the program consists of education in job safety, soldering and brazing, basic electricity, forced air gas furnace service, hydronic service, airflow problems, duct sizing, and troubleshooting gas-fired equipment. Performance testing after repairs is emphasized. State-of-the-art Simutech computer simulation programs are used along with live equipment in the lab.

The Air Conditioning focus of the program consists of basic refrigeration, refrigerant recovery training, principles of A/C operation, heat pumps, further airflow problems, analysis, and troubleshooting of the total system. Performance testing after repairs is emphasized. State-of-the-art Simutech computer simulation programs are used along with live equipment in the lab.

The Plumbing Service I Technical Certificate complements the HVAC program and prepares the student with entry-level residential skills required by employers in the plumbing industry. This initial certificate concentrates on plumbing fundamentals and allows the student to begin working in the plumbing industry as an apprentice as well as scaffolding into the HVAC AAS Degree option. This option can be completed in one semester and is offered in the spring only.

Important information about this program:

- EPA certification is part of this program and students will be required to pay the examination fee.
- NATE and ESCO certifications are optional and will have additional examination costs.

For more information on what you can do with this major, visit CMU Tech's [Programs of Study](#) page.

All CMU/CMU Tech technical certificate graduates are expected to demonstrate proficiency in communication fluency, quantitative fluency, specialized knowledge/applied learning, and critical thinking. In addition to these campus-wide student learning outcomes, graduates of this major will be able to:

1. Demonstrate professional behavior and communication skills including listening, speaking, and writing specifically to the HVAC industry. (Communication Fluency)

2. Demonstrate safe work habits in the performance of tasks in the HVAC industry. (Specialized Knowledge, Applied Learning)
3. Demonstrate professional and ethical behavior, and workplace responsibility as a HVAC repair technician. (Personal and Social Responsibility)
4. Demonstrate basic troubleshooting skills and repair skills to fulfill the requirements of HVAC service and repair technicians. (Critical Thinking)
5. Utilize mathematical concepts to analyze and implement troubleshooting systems including systems containing hardware and software components of HVAC systems. (Quantitative Fluency)

## Contact Information

### CMU Tech

Office of Student Services, Kayenta Hall 102  
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## Programs of Study Associates

- [Heating, Ventilation, and Air Conditioning Technician \(AAS\)](#)

## Certificates

- [HVAC: HVAC Fundamentals \(Technical Certificate\)](#)
- [Plumbing Service I \(Technical Certificate\)](#)