



## **Heating and Air Conditioning A.A.S.**

Career Community: Building and Construction Trades

Curriculum Code: 0836

Effective: Fall 2023 – Summer 2028

### **Description**

Heating, Ventilating, Air Conditioning and Refrigeration (HVAC/R) technicians work on systems that control temperature, humidity, and air quality of enclosed spaces. They are required to design, install, service, and maintain the various types of equipment used to control human comfort, preservation of food products, critical medical supplies, and computer and mechanical processes in residential, commercial, industrial, and institutional environments. Technicians must have a strong mechanical aptitude, be self-motivated, willing to accept challenges, and have a structured approach to problem solving. They should also have good communication skills, the ability to work well with others, and understand all aspects of the construction trade. Students completing this curriculum may also be eligible to apply for a Certificate of Achievement in Heating and Air Conditioning (0832).

### **Milestone**

In addition to the required General Education courses in Math and English, completion of HVAC 100 and HVAC 110 with a 2.0 or higher is a key component for success in completing this program. Knowledge obtained in these courses is the foundation for learning in other required courses. Students are encouraged to contact their faculty if they need additional assistance with learning the concepts presented in these courses.

### **Additional Information**

If students have already completed DCTM 102, ELTE 102, HVAC 102, METS 102, or WELD 102 with a grade of 2.0 or higher, that will satisfy the TECH 102 requirement. Any of these courses will fulfill the prerequisite for HVAC 110, HVAC 113, and HVAC 115.

### **Contact Information**

For further information, including career options, course substitutions and waivers, etc., contact the Heating and Air Conditioning Program, West Campus Building, Room M127, telephone number 517-483-1570 or Student Services West Campus, West Campus Building, Room M106, telephone number 517-267-5452.

### **General Education - Applied Degree, Recommended Courses**

(For the full list of options, see [General Education](#))

- English Composition or Applied English – *Select one*  
ENGL 124, Technical Writing, 3 credits / 3 billing hours
- English Composition (second course)/Communication or Applied Communication – *Select one*  
COMM 130, Fundamentals Public Speaking, 3 credits / 3 billing hours

- Humanities and Fine Arts or Social Sciences or Applied Social Sciences – *Select one*  
GEOG 200, World Regional Geography, 4 credits / 4 billing hours
- Mathematics or Applied Mathematics – *Select one*  
MATH 115, Technical Math II, 4 credits / 4 billing hours
- Natural Sciences Lab or Applied Science and Technology Lab – *Select one*  
PHYS 120, The Art of Physics, 4 credits / 5 billing hours

### Program of Study Required Courses

| Course Code | Course Title                   | Credit / Billing Hours |
|-------------|--------------------------------|------------------------|
| HVAC 100    | Fundamentals of HVAC           | 3 / 3                  |
| HVAC 110    | Applied Electricity I          | 3 / 4                  |
| HVAC 111    | Applied Electricity II         | 3 / 4                  |
| HVAC 113    | HVAC/R Piping                  | 3 / 4                  |
| HVAC 115    | Sheet Metal Fab & Installation | 2 / 3                  |
| HVAC 120    | Heating I                      | 3 / 4                  |
| HVAC 130    | Air Conditioning I             | 3 / 4                  |
| HVAC 201    | Mechanical Code                | 4 / 4                  |
| HVAC 220    | Heating II                     | 3 / 4                  |
| HVAC 221    | Introduction to Hydronics      | 3 / 4                  |
| HVAC 230    | Air Conditioning II            | 3 / 4                  |
| HVAC 231    | Heat Pump                      | 3 / 4                  |
| HVAC 240    | Refrigeration I                | 3 / 4                  |
| HVAC 241    | Refrigeration II               | 3 / 4                  |
| HVAC 251    | Fund of Direct Digital Control | 3 / 4                  |
| TECH 102    | General Industry Safety        | 2 / 3                  |

### Program of Study Required Courses, Limited Choice - *Select two*

| Course Code | Course Title                   | Credit / Billing Hours |
|-------------|--------------------------------|------------------------|
| DCTM 100    | Intro to the Built Environment | 3 / 4                  |
| DCTM 101    | Drafting/Intro to CAD          | 3 / 4                  |
| ELTE 141    | National Electric Code I       | 4 / 4                  |
| ELTE 150    | Electric Motor Maintenance     | 2 / 3                  |
| HVAC 140    | Residential Energy             | 3 / 4                  |
| HVAC 210    | Solar Energy Technologies      | 3 / 4                  |
| WELD 103    | Combination Welding            | 4 / 6                  |

### Minimum Total Credit Hours

70 credits / 87 billing hours

## Recommended Course Sequence

| Semester I                                      |
|---|
| Gen Ed – English Composition or Applied English |
| HVAC 100 – Milestone course                     |
| HVAC 110 – Milestone course                     |
| HVAC 113  |
| HVAC 115  |
| TECH 102  |

| Semester II                                 |
|---|
| Gen Ed – Mathematics or Applied Mathematics |
| HVAC 111                                    |
| HVAC 120                                    |
| HVAC 130                                    |
| Limited Choice                              |

| Semester III  |
|---|
| Gen Ed – English Composition (second course)/Communication or Applied Communication |
| HVAC 220  |
| HVAC 221  |
| HVAC 230  |
| HVAC 240  |
| Limited Choice  |

| Semester IV   |
|---|
| Gen Ed - Humanities and Fine Arts or Social Sciences or Applied Social Sciences |
| Gen Ed – Natural Sciences Lab or Applied Science and Technology Lab             |
| HVAC 201  |
| HVAC 231  |
| HVAC 241  |
| HVAC 251  |

*LCC makes every effort to limit revisions to the pathways during their effective timeframe. However, the College reserves the right to update certificate and degree title changes, and make course changes as needed, without prior notice.*