



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

Career Community: Building and Construction Trades

Curriculum Code: 0836

Effective: Fall 2025 – Summer 2030

### **Purpose of the Major**

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 with a grade of 2.0 or higher, that will satisfy the TECH 102 requirement. DCTM 102 will also 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.

**Major Required Courses**—*A minimum grade of 2.0 is required for General Education courses.*

Course Code	Course Title	Credit / Billing Hours
ACAD 100	First-Year Experience	1 / 1
COMM 110 or	Communication in the Workplace	3 / 3
COMM 120 or	Dynamics of Communication	3 / 3
COMM 130 or	Fundamentals Public Speaking	3 / 3
COMM 200 or	Small Group Communication	3 / 3

Course Code	Course Title	Credit/ Billing Hours
COMM 240 or COMM 260 or ENGL 122 or ENGL 132	Interpersonal Communication Nonverbal Communication Composition II Honors Composition II	3 / 3 3 / 3 4 / 4 4 / 4
ENGL 121 or ENGL 124 or ENGL 127 or ENGL 131	Composition I Technical Writing Business Writing Honors Composition I	4 / 4 3 / 3 3 / 3 4 / 4
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
MATH 115 or MATH 119 or MATH 120 or MATH 126 or STAT 170	Technical Mathematics Math – Applications for Living College Algebra Precalculus Introduction to Statistics	4 / 4 4 / 4 4 / 4 5 / 5 4 / 4
TECH 102	General Industry Safety	2 / 3

Notes:

ACAD 100 may be waived when students meet one of the following College-approved waiver criteria:

- Completion of 12 college-level credits with minimum grades of 2.0 shown on the LCC transcript (including transfer, if applicable), or
- Employment in the field of, or a field related to, the degree being sought

Students wishing to waive ACAD 100 should contact their advisor.

Students considering future transfer, choose MATH 119, MATH 120, MATH 126, or STAT 170.

**Major Required Courses, Limited Choice – Humanities and Fine Arts or Social Sciences or Applied Social Sciences** - *Select one as recommended or select one from [LCC General Education Applied Degrees](#): Humanities and Fine Arts or Social Sciences or Applied Social Sciences. A minimum grade of 2.0 is required for General Education courses.*

Course Code	Course Title	Credit / Billing Hours
GEOG 200	World Regional Geography	4 / 4
MGMT 234	Diversity in the Workplace	3 / 3
SOCL 120	Introduction to Sociology	4 / 4

Note: Students considering future transfer, choose GEOG 200 or SOCL 120.

**Major Required Courses, Limited Choice – Natural Sciences or Applied Sciences and Technology Lab** - *Select one lab course as recommended or select one from [LCC General Education Applied Degrees](#): Natural Sciences or Applied Sciences and Technology Lab. A minimum grade of 2.0 is required for General Education courses.*

Course Code	Course Title	Credit / Billing Hours
BIOL 120	Environmental Science	4 / 6
CHEM 135	Chemistry in Society	4 / 5
PHYS 120	The Art of Physics	4 / 5
PHYS 200	Intro to Applied Physics	4 / 5
PHYS 221	Introductory Physics I	4 / 6

**Major 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 Electrical Code I	4 / 4
ELTE 150	Electric Motor Maintenance	2 / 3
HVAC 140	Residential Energy	3 / 4
WELD 103	Combination Welding	4 / 6

### **General Education - Applied Degree**

- English Composition or Applied English  
Major Required Courses will meet this requirement.
- English Composition (second course)/Communication or Applied Communication  
Major Required Courses will meet this requirement.
- Humanities and Fine Arts or Social Sciences or Applied Social Sciences  
Major Required Limited Choice Courses will meet this requirement.
- Mathematics or Applied Mathematics  
Major Required Courses will meet this requirement.
- Natural Sciences Lab or Applied Sciences and Technology Lab  
Major Required Limited Choice Courses will meet this requirement.

## Additional Credits

After completing the course and credit requirements as noted on this pathway, students who fall short of the 60-credit minimum required for an Associate Degree may select any course(s) needed to reach 60 credits, except those courses noted in number 7 in the [Institutional Requirements for Associate Degrees](#). Students are encouraged to use Degree Works and meet with an Advisor to ensure all requirements are met and for course recommendations.

## Minimum Total Credit Hours

69 credits / 86 billing hours

## Recommended Course Sequence

Semester I
ACAD 100
ENGL 121 or ENGL 124 or ENGL 127 or ENGL 131
HVAC 100 – Milestone course
HVAC 110 – Milestone course
HVAC 113
HVAC 115
TECH 102

Semester II
HVAC 111
HVAC 120
HVAC 130
MATH 115 or MATH 119 or MATH 120 or MATH 126 or STAT 170
Limited Choice

Semester III
COMM 110 or COMM 120 or COMM 130 or COMM 200 or COMM 240 or COMM 260 or ENGL 122 or ENGL 132
HVAC 220
HVAC 221
HVAC 230
HVAC 240
Limited Choice

Semester IV
HVAC 201
HVAC 231
HVAC 241
HVAC 251
Limited Choice - Humanities and Fine Arts or Social Sciences or Applied Social Sciences
Limited Choice – Natural Sciences Lab or Applied Sciences and Technology Lab

*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 titles, and make course changes as needed, without prior notice. The College also reserves the right to discontinue programs when warranted.*