



2024-2025 Academic Year

# Heating, Refrigeration and Air Conditioning

Associate in Applied Science Degree (A.A.S.)

**B-STEM Division**

Business, Science, Technology, Engineering and Math

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The **Heating, Refrigeration and Air Conditioning** program prepares a student for such positions as service representative, service supervisor, estimator, system designer, and laboratory technician. Graduates assume supervisory, management and technical responsibility.

The HRA courses are part of a joint program between Mercer County Community College and the Mercer County Technical Schools.

## PROGRAM OUTCOMES

- Perform all service functions of a graduate of the certificate program;
- Communicate effectively by oral, written, or graphic means;
- Produce basic mechanical drawings and sketches needed to communicate concepts and designs;
- Understand the laws of physics as they apply to the subject field;
- Perform computations necessary to solve basic load sizing problems;
- Apply the fundamental laws of thermodynamics and the basic principles of heat flow as they apply to HRAC;
- Determine proper air distribution in HRAC systems.

The program may be pursued part-time or full-time, but most required courses are available only in the evening.

Admission to the program requires a high school diploma or its equivalent with one year of algebra or applied mathematics.

## SEE ALSO:

[Heating, Refrigeration and Air Conditioning](#) certificate program

# DEGREE CURRICULUM

2024-2025 Academic Year

HRAC.AAS  
CIP 150501

The course sequence below represents a recommended example of how this degree program can be completed in two years, presuming a Fall Term start and satisfaction of all Developmental Studies (foundation courses) requirements and prerequisites. Actual approaches toward completion depend on each student's anticipated transfer institution, career objectives, or other individual circumstances.

Students are encouraged to meet regularly with an academic advisor or Success Coach to consider options, establish plans, and monitor progress.

Code	Course (lecture/lab hours)	Credits	To Do This Semester
<b>FIRST SEMESTER</b>			
<a href="#">CSW 100</a>	College Success and Personal Wellness (2/0) <ul style="list-style-type: none"><li>Some exemptions apply. Consult academic advisor for details.</li></ul>	2	✓ Meet with your faculty advisor to complete an academic plan. Make sure you are aware of any course prerequisites you may need to take, and how long it will take to complete your degree.  ✓ Use your online tools: Check your <a href="#">MercerMail</a> daily, utilize features of Office 365, and get to know <a href="#">Student Planning</a> .  ✓ Take advantage of <a href="#">Learning Centers</a> or <a href="#">Online Tutoring</a> to support your studies and assignments.
<a href="#">EET 130</a>	Fundamentals of Electronics (2/2)	3	
<a href="#">ENG 101</a>	English Composition I (3/0)	3	
<a href="#">HRA 101</a>	Principles of Refrigeration / Air Conditioning I (1/2)	2	
<a href="#">HRA 102</a>	Principles of Refrigeration / Air Conditioning II (1/2)	2	
<a href="#">MAT 115</a>	Algebra and Trigonometry I (3/0)	3	
<b>SECOND SEMESTER</b>			
<a href="#">ECO 103</a>	Basic Economics (3/0)	3	

<a href="#">ENG 102</a>	English Composition II (3/0)	3	<p>✓ Transitioning to college can be challenging. Meet with your <a href="#">Success Coach</a> for guidance and support.</p> <p>✓ Apply for <a href="#">financial aid</a> by May 1.</p> <p>✓ Contact professors with questions and use their office hours to develop a connection. Talk with them to get the inside scoop on how your profession works.</p> <p>✓ Be sure to visit the <a href="#">Career Services</a> office to explore jobs, internships, and career information and get help with your resume and other career tools.</p> <p>✓ Apply for Continuing Student scholarships at <a href="http://www.mccc.edu/m-scholarships">www.mccc.edu/m-scholarships</a>.</p>
<a href="#">HRA 103</a>	Refrigeration / Air Conditioning Electrical Controls (2/4)	4	
<a href="#">IST 101</a>	Computer Concepts with Applications (2/2)	3	
— —	<a href="#">General Education elective</a>	3	

### THIRD SEMESTER

<a href="#">EET 140</a>	Electronic Construction (1/3)	2	<p>✓ Keep in contact with each professor and your faculty advisor. Make sure you are on track to graduate on time.</p> <p>✓ Work with <a href="#">Career Services</a> to formulate plans for after you've earned this degree.</p>
<a href="#">HRA 104</a>	Domestic Heating and Air Conditioning Systems (2/4)	4	
<a href="#">PHY 111</a>	Physical Science Concepts (2/2)	3	
— —	<a href="#">General Education elective</a>	3	

- Select course from the following [general education](#) categories: Social Science, Humanities, Historical Perspective, Diversity and Global Perspective.

— —	Elective	3	<p>✓ Develop team and leadership skills by getting involved in <a href="#">activities and clubs</a>.</p> <p>✓ Apply for Continuing Student scholarships at <a href="http://www.mccc.edu/m-scholarships">www.mccc.edu/m-scholarships</a>.</p> <p>✓ Manage your stress! Take advantage of the MCCC pool, <a href="#">Fitness Center</a>, free yoga and Zumba. Reach out for <a href="#">counseling</a> or other support if you need it. Your <a href="#">Success Coach</a> can connect you with resources.</p>
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**FOURTH SEMESTER**

<a href="#">HRA 202</a>	Light Commercial Systems I (1/2)	2	✓ Get ready to start your career! Begin the job application process.
<a href="#">HRA 203</a>	Light Commercial Systems II (1/2)	2	
<a href="#">HRA 205</a>	Heavy Commercial Systems (1/4)	4	✓ Discuss your career plans with your faculty advisor. S/he can help you transition successfully.
— —	Elective	3	
— —	Elective	3	

**60**

**NOTE:** Electives should be selected in consultation with an academic advisor.