Heating, Refrigeration and Air Conditioning
Certificate of Proficiency

B-STEM Division
Business, Science, Technology, Engineering and Math
609.570.3482 admiss@mccc.edu

Heating, Refrigeration and Air Conditioning is a joint program between Mercer County Community College and the Mercer County Technical Schools. It is designed to prepare students for employment in commercial establishments and industry, in such positions as refrigeration mechanic, commercial air conditioning mechanic, furnace installer and repairer, oil burner installation and service technician, gas heating system servicer, and mobile air conditioning system mechanic.

Admission to the certificate program requires a high school diploma or its equivalent with one year of algebra or applied mathematics. Students must demonstrate mathematics proficiency at the MAT 037 level to qualify for the certificate.

The program is part-time only and most courses are offered only during the evening.

PROGRAM OUTCOMES

- Explain the basic theories and fundamental principles of heat transfer;
- Service, troubleshoot, and repair domestic and commercial refrigeration and air conditioning systems and components;
- Use electrical and mechanical test equipment and metering devices;
- Utilize a working knowledge of control circuitry, instrumentation and ladder diagram/schematic interpretation;
- Determine heating and air conditioning size requirements for a building of specific volume, orientation on lot, and geographic location.

SEE ALSO:

Heating, Refrigeration and Air Conditioning degree program

CERTIFICATE CURRICULUM

2023-2024 Academic Year
HRAC.CERT
CIP 150501

Credit-bearing certificate programs can serve as gateways to earning an associate degree. Students are encouraged to consult the program coordinator, an academic advisor or Success Coach to explore such opportunities.

Code	Course (lecture/lab hours)	Credits
EET 130	Fundamentals of Electronics (2/2)	3
HRA 101	Principles of Refrigeration / Air Conditioning I (1/2)	2
HRA 102	Principles of Refrigeration / Air Conditioning II (1/2)	2
MAT 115	Algebra and Trigonometry I (3/0)	3
HRA 103	Refrigeration / Air Conditioning Electrical Controls (2/4)	4
HRA 104	Domestic Heating and Air Conditioning Systems (2/4)	4
EET 140	Electronic Construction (1/3)	2
ENG 101	English Composition I (3/0)	3
HRA 202	Light Commercial Systems I (1/2)	2
HRA 203	Light Commercial Systems II (1/2)	2
HRA 205	Heavy Commercial Systems (1/4)	4
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NOTE: Students must earn a minimum grade of C in all HRA courses.