

Heating, Refrigeration and Air Conditioning

Program **HRAC.AAS**
CIP 150501

Associate in Applied Science Degree

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.

A.A.S. Curriculum

Code	Course (lecture/lab hours)	Credits
FIRST SEMESTER		
CSW 100	College Success and Personal Wellness (2/0)†	2
EET 130	Fundamentals of Electronics (2/2)	3
ENG 101	English Composition I (3/0)	3
ENT 116	Engineering Graphics (1/2)	2
HRA 101	Principles of Refrigeration/ Air Conditioning I (1/2)	2
HRA 102	Principles of Refrigeration/ Air Conditioning II (1/2)	2
MAT —	Mathematics elective ¹	3-4
SECOND SEMESTER		
ECO 103	Basic Economics (3/0)	3
ENG 102	English Composition II (3/0)	3
HRA 103	Refrigeration/Air Conditioning Electrical Controls (2/4)	4
IST 101	Computer Concepts with Applications (2/2)	3
— —	Electives	4-5
THIRD SEMESTER		
EET 140	Electronic Construction (1/3)	2
HRA 104	Domestic Heating and Air Conditioning Systems (2/4)	4
PHY 111	Physical Science Concepts (2/2)	3
— —	Technical electives ²	3-5
FOURTH SEMESTER		
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
ERG —	Energy elective ³	3
— —	General Education elective ⁴	3
		60-64

NOTE: Electives should be selected in consultation with an academic advisor in order to assure maximum transfer of credits.

¹ Select in consultation with an academic advisor.

² Select technical electives in consultation with an academic advisor.
Recommended: DRA 190; ERG 111, 112, 113.

³ Select from ERG 111, 112, 113.

⁴ Select course from the following general education categories: Social Science, Humanities, Historical Perspective, Diversity and Global Perspective.

† Some exemptions apply. Consult academic advisor for details.

NOTE: All program listings are subject to periodic updates. Please consult your program advisor, academic division, or www.mccc.edu/programs_degree

