

Technical and Vocational Programs

D 35 10 0 Air Conditioning, Heating and Refrigeration (HVAC) Technology – Diploma

C 35 10 0 I Air Conditioning, Heating and Refrigeration (HVAC) Technology – Certificate I

C 35 10 0 II Air Conditioning, Heating and Refrigeration (HVAC) Technology – Certificate II

(This program is offered at COA - Dare and COA - Edenton-Chowan)

(Class offerings may vary by semester at each location)

CONCENTRATION OVERVIEW

The Air Conditioning, Heating, and Refrigeration Technology curriculum provides the basic knowledge to develop skills necessary to work with residential and light commercial systems. Topics include mechanical refrigeration, heating and cooling theory, electricity, controls, and safety. The diploma program covers air conditioning, furnaces, heat pumps, tools and instruments.

Upon completion of this concentration, graduates will be able to assist in the startup, preventive maintenance, service, repair, and/or installation of residential and light commercial systems.

Student Learning Outcomes – Upon completion of the program, students will be able to :

1. Complete layout drawings for HVAC systems using approved engineering methods.
2. Demonstrate competency on the concepts and theory for the Federal 608 CFC certification test.
3. Demonstrate knowledge about the refrigeration cycle explaining the major components and the physical state of the refrigerant in the system.
4. Demonstrate knowledge of basic electricity and work on electrical components in a safe manner.



Partnership: Level Three Instructional Service Agreement between College of The Albemarle and Beaufort County Community College

*This program offers a [Career and College Promise pathway \(CCP\) D35100H](#). Courses within the pathway are highlighted in yellow.

D 35 10 0 Air Conditioning, Heating and Refrigeration (HVAC) Technology - Diploma

First Year Fall Semester Course Number and Title	Pre-Requisites and Co-Requisites	Class Hours	Lab Hours	Clinical Hours	Total Contact Hours	Total Credit Hours
AHR 110 Intro to Refrigeration	Pre-Requisites: None	2	6		8	5
AHR 111 HVAC Electricity	Pre-Requisites: None	2	2		4	3
AHR 112 Heating Technology	Pre-Requisites: None	2	4		6	4
AHR 160 Refrigerant Certification	Pre-Requisites: None Co-Requisites: AHR 110 or AHR 113	1			1	1
AHR 113 Comfort Cooling	Pre-Requisites: None	2	4		6	4
Select one of the following: COM 101 Workplace Communication OR COM 110 Intro to Comm OR COM 120 Intro to Interpersonal Comm OR ENG 111 Writing & Inquiry	Pre-Requisites: COM 101: None COM 110 : None COM 120: None ENG 111: ENG 025	3			3	3
TOTAL SEMESTER HOURS		12	16		28	20
First Year Spring Semester Course Number and Title	Pre-Requisites and Co-Requisites	Class Hours	Lab Hours	Clinical Hours	Total Contact Hours	Total Credit Hours
AHR 114 Heat Pump Technology	Pre-Requisites: AHR 110 or 113	2	4		6	4
AHR 130 HVAC Controls	Pre-Requisites: AHR 111 or ELC 111 or ELC 112	2	2		4	3
AHR 213 HVACR Building Code	Pre-Requisites: AHR 110 or AHR 113	1	2		3	2
ISC 110 Workplace Safety	Pre-Requisites: None	1			1	1
WBL 110 World of Work, WBL 111 or WBL 112 Work-Based Learning I	Pre-Requisites: None	0-1		0-20	1-20	1-2
AHR 255 Indoor Air Quality	Pre-Requisites: AHR 110	1	2		3	2
Select one of the following: MAT 110 Math Measurement MAT 143 Quantitative Lit MAT 171 Precalculus Algebra	Pre-Requisites: MAT 110: None MAT 143: ENG 025 and MAT 025 MAT 171: MAT 035 or MAT 110 or MAT 143 or MAT 152 with a C or higher	2-3	2		4-5	3-4
TOTAL SEMESTER HOURS		9-11	12	0-20	22-42	16-18
TOTAL SEMESTER HOURS REQUIRED FOR DIPLOMA						36-37

"Courses may be offered during different semesters based on campus location."

C 35 10 0 I Air Conditioning, Heating, and Refrigeration Technology Certificate I

Certificate Course Number and Title	Pre-Requisites and Co-Requisites	Class Hours	Lab Hours	Clinical Hours	Total Contact Hours	Total Credit Hours
AHR 110 Intro to Refrigeration	Pre-Requisites: None	2	6		8	5
AHR 111 HVAC Electricity	Pre-Requisites: None	2	2		4	3
AHR 112 Heating Technology	Pre-Requisites: None	2	4		6	4
AHR 113 Comfort Cooling	Pre-Requisites: None	2	4		6	4
TOTAL SEMESTER HOURS		8	16		24	16
TOTAL SEMESTER HOURS REQUIRED FOR CERTIFICATE						16

C 35 10 0 II Air Conditioning, Heating, and Refrigeration Technology Certificate II

To complete higher level certificates, students may be required to complete coursework offered in the previous certificate to meet all required course pre-requisites.

Certificate Course Number and Title	Pre-Requisites and Co-Requisites	Class Hours	Lab Hours	Clinical Hours	Total Contact Hours	Total Credit Hours
AHR 114 Heat Pump Technology	Pre-Requisites: AHR 110 or AHR 113	2	4		6	4
AHR 130 HVAC Controls	Pre-Requisites: AHR 111 or ELC 111 or ELC 112	2	2		4	3
AHR 160 Refrigerant Certification	Pre-Requisites: None Co-Requisites: AHR 110 or AHR 113	1			1	1
AHR 255 Indoor Air Quality	Pre-Requisites: AHR 110 or AHR 113	1	2		3	2
AHR 213 HVACR Building Code	Pre-Requisites: AHR 110 or AHR 113	1	2		3	2
TOTAL SEMESTER HOURS		7	10		17	12
TOTAL SEMESTER HOURS REQUIRED FOR CERTIFICATE						12