

Program Planning Guide

Air Conditioning, Heating, & Refrigeration Technology Core II, Certificate (C35100C2)

Program Length: 4 semesters

Career Pathway Options: Associate in Applied Science Degree in Air Conditioning, Heating, & Refrigeration Technology; Diploma in Air Conditioning, Heating, & Refrigeration Technology; Certificate in Air Conditioning, Heating, Refrigeration Technology Core II

Program Site/s: Howard-James Industry Training Center

Suggested Course Schedule:		Hours			Notes:
		Class	Lab	Credit	
1st Semester (Spring)					
AHR 114	Heat Pump Technology	2	4	4	
2nd Semester (Summer)					
AHR 115	Refrigeration Systems	1	3	2	
3rd Semester (Spring)					
AHR 213	HVACR Building Code	1	2	2	
4th Semester (Summer)					
AHR 211	Residential System Design	2	2	3	
WBL 111	Work Based Learning I	0	10	1	
		2	12	4	
Total Semester Hours Credit Required for Graduation:				12	

Course Descriptions:

AHR 114 Heat Pump Technology **2-4-4**

Prerequisite: AHR 110 or AHR 113

This course covers the principles of air source and water source heat pumps. Emphasis is placed on safety, modes of operation, defrost systems, refrigerant charging, and system performance. Upon completion, students should be able to understand and analyze system performance and perform routine service procedures.

AHR 115 Refrigeration Systems **1-3-2**

Prerequisite: AHR 110

This course introduces refrigeration systems and applications. Topics include defrost methods, safety and operational control, refrigerant piping, refrigerant recovery and charging, and leak testing. Upon completion, students should be able to assist in installing and testing refrigeration systems and perform simple repairs.

AHR 211 Residential System Design **2-2-3**

This course introduces the principles and concepts of conventional residential heating and cooling system design. Topics include heating and cooling load estimating, basic psychrometrics, equipment selection, duct system selection, and system design. Upon completion, students should be able to design a basic residential heating and cooling system.

AHR 213 HVACR Building Code **1-2-2**

This course covers the North Carolina codes that are applicable to the design and installation of HVACR systems. Topics include current North Carolina codes as applied to HVACR design, service, and installation. Upon completion, students should be able to demonstrate the correct usage of North Carolina codes that apply to specific areas of the HVACR trade.

WBL 111 Work-Based Learning **0-10-1**

Local Prerequisite: Approval of Instructor or Department Chairperson

This course provides a work-based learning experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.