CENTRAL CAROLINA COMMUNITY COLLEGE

Applied Technologies

Program Planning Guide

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

Program Length: 4 semesters
Program Sites: Center for Workforce Innovation/Howard James Industrial Training Center
Career Pathway Options: Associate in Applied Science Degree in Air Conditioning, Heating, and Refrigeration

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

Course Descriptions

AHR 114 Heat Pump Technology

Prerequisite: Take one 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 System

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

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

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 I

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.