Program Planning Guide

Air Conditioning, Heating & Refrigeration Technology-Intermediate, Certificate (C35100I)

Program Length: 4 Semesters
Career Pathway Options: Associate in Applied Science Technology in Air Conditioning, Heating & Refrigeration; Diploma in Air Conditioning, Heating, & Refrigeration; Certficate in Air Conditioning, Heating, & Refrigeration Technology-Intermediate
Program Site/s: Howard-James Industry Training Center

Suggested Course Schedule:		Hours				
		Class	Lab	Clinical	Credit	Notes:
1st Semester (Summer)						
AHR 115	Refrigeration Systems	1	3	0	2	
2nd Semester (Fall)						
AHR 125	HVACR Electronics	2	2	0	3	
AHR 133	HVAC Servicing	2	6	0	4	
AHR 151	HVAC Duct Systems I	1	3	0	2	
					9	
3rd Semester (Spring)						
AHR 215	Commercial HVAC Controls	1	3	0	2	
AHR 225	Commercial System Design	2	3	0	3	
AHR 180	HVACR Customer Relations	1	0	0	1	
					6	
4th Semester (Summer)						
WBL 111	Work-based Learning I	0	0	10	1	

Total Semester Hours Credit Required for Graduation: 18

Course Descriptions:

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 125 HVACR Electronics 2-2-3

Prerequisite: Take one: AHR 111, ELC 111, or ELC 112

This course introduces the common electronic control components in HVACR systems. Emphasis is placed on identifying electronic components and their functions in HVACR systems and motor-driven control circuits. Upon completion, students should be able to identify components, describe control circuitry and functions, and use test instruments to measure electronic circuit values and identify malfunctions.

AHR 133 HVAC Servicing 2-6-4

Corequisites: AHR 112 or AHR 113

The course covers the maintenance and servicing of HVAC equipment. Topics include testing, adjusting, maintaining, and troubleshooting HVAC equipment and record keeping. Upon completion, students should be able to adjust, maintain, and service HVAC equipment.

AHR 151 HVAC Duct Systems I 1-3-2

This course introduces the techniques used to lay out and fabricate duct work commonly found in HVAC systems. Emphasis is placed on the skills required to fabricate duct work. Upon completion, students should be able to lay out and fabricate simple duct work.

AHR 180 HVACR Customer Relations 1-0-1
This course introduces common business and customer relation practices that may be encountered in HVACR. Topics include business practices, appearance of self and vehicle, ways of handling customer complaints, invoices, telephone communications, and warranties. Upon completion, students should be able to present themselves to customers in a professional manner, understand how the business operates, complete invoices, and handle complaints.

AHR 215 Commercial HVAC Controls 1-3-2
Prerequisites: Take one: AHR 111, ELC 111, or ELC 112
This course introduces HVAC control systems used in commercial applications. Topics include electric/electronic control systems, pneumatic control systems, DDC temperature sensors, humidity sensors, pressure sensors, wiring, controllers, actuators, and controlled devices. Upon completion, students should be able to verify or correct the performance of common control systems with regard to sequence of operation and safety.

AHR 225 Commercial System Design 2-3-3
This course covers the principles of designing heating and cooling systems for commercial buildings. Emphasis is placed on commercial heat loss/gain calculations, applied psychometrics, air-flow calculations, air distribution system design, and equipment selection. Upon completion, students should be able to calculate heat loss/gain, design and size air and water distribution systems, and select equipment.

WBL 111 Work-Based Learning I 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.