

Refrigeration

Career Studies Certificate

Program Coordinator: Jim Kroll • jkroll@vhcc.edu • 276-739-2560

Length: One Semester

Purpose: Provide foundation training in Basic Refrigeration, including basic refrigeration system installation, components, leak testing, evacuation, operation, brazing, refrigerant recovery, refrigerant charging, and safety. Provide basic electrical training in Ohm's Law, series circuits, parallel circuits, and multi-meter use. This entry-level training is for students new to the HVACR industry, as well as updating the skills of those who want to improve their current skills for advancement in the workplace.

Admission Requirements: A student eligible for admission to the College can normally be considered for admission to the Refrigeration Career Studies Certificate. Proficiency in high school mathematics is required. Direct enrollment guidelines using either multiple measures or informed placement will determine a student's placement into college-level English and mathematics courses.

Due to HVACR industry changes related to EPA regulations involving refrigerants, DOE efficiency requirements for equipment, and equipment manufacturer requirements for updated training, students requesting advanced placement credit for any AIR classes more than 8 years old, from VHCC or other sources, will need to demonstrate competency, and an understanding of current HVACR procedures to the HVACR faculty in order to receive approval.

Program Requirements: The majority of the curriculum will consist of courses in Basic Refrigeration. The program will consist of both theoretical concepts and practical applications needed for success in this skilled field. Training will include both classroom and hands-on with live equipment. Each student is advised to consult with his/her advisor and counselor for program planning. Upon successful completion, the student will be awarded a Career Studies Certificate Level I.

**Program can be completed in day or evening classes. The day program starts in even numbered years and the evening program starts in odd numbered years.

Course Number	Course Title	Lecture Hours	Lab Hours	Credits
First Semester (Fall)				
SDV 101	Orientation to college Success	1	0	1
AIR 111	Air Conditioning and Refrigeration Controls I ¹	2	2	3
AIR 121	Air Conditioning and Refrigeration I ¹	2	2	3
AIR 159	Heating and Cooling Safety	1	0	1
AIR 171	Refrigeration I ¹	4	6	6
MTH 111	Basic Technical Mathematics	3	0	3
Total Credits for Career Studies Certificate		13	10	17

¹ Co-Requisite courses: AIR 111, AIR 171, AIR 121

Commercial Refrigeration

Career Studies Certificate

Program Coordinator: Jim Kroll • jkroll@vhcc.edu • 276-739-2560

Length: One Semester

Purpose: Provide training in Commercial Refrigeration, including the medium and low temperature refrigeration cycle, system installation, components, leak testing, evacuation, operation, refrigerant recovery, refrigerant charging, and safety. Provide basic electrical training in commercial refrigeration controls, including pressure, time, and temperature operated controls, defrost circuits, multi-meter use, and EPA regulations. This entry-level training is for students new to the HVACR industry, as well as updating the skills of those who want to improve their current skills for advancement in the workplace.

Admission Requirements: Students must complete the Refrigeration Career Studies Certificate prior to enrollment in the Commercial Refrigeration Career Studies Certificate unless the Program Coordinator grants approval. Proficiency in high school English is required. Direct enrollment guidelines using either multiple measures or informed placement will determine a student's placement into college-level English and mathematics courses.

Due to HVACR industry changes related to EPA regulations involving refrigerants, DOE efficiency requirements for equipment, and equipment manufacturer requirements for updated training, students requesting advanced placement credit for any AIR classes more than 8 years old, from VHCC or other sources, will need to demonstrate competency, and an understanding of current HVACR procedures to the HVACR faculty in order to receive approval.

Program Requirements: The majority of the curriculum will consist of courses in Commercial Refrigeration. The program will consist of both theoretical concepts and practical applications needed for success in this skilled field. Training will include both classroom and hands-on with live equipment. Each student is advised to consult with his/her advisor and counselor for program planning. Upon successful completion, the student will be awarded a Career Studies Certificate in Commercial Refrigeration.

**Program can be completed in day or evening classes. The day program starts in even numbered years and the evening program starts in odd numbered years.

Course Number	Course Title	Lecture Hours	Lab Hours	Credits
Second Semester (Spring)				
AIR 112	Air Conditioning and Refrigeration Controls II ¹	2	2	3
AIR 122	Air Conditioning and Refrigeration II	2	2	3
AIR 172	Refrigeration II ¹	4	6	6
AIR 276	Refrigerant Usage EPA Certification ¹	1	0	1
ENG 115	Technical Writing	3	0	3
Total Credits for Career Studies Certificate		12	10	16

Footnote:

Students should have previous training and/or working knowledge of vapor-compression, common service equipment and procedures in HVAC/R.

¹ Co-Requisite Courses: AIR 112, AIR 172, AIR 122