

HVAC/Refrigeration Technology

Associate of Applied Science, 61-64 Credit Hours, 18-Month Program

The Heating, Ventilating, Air-Conditioning/Refrigeration (HVAC/R) program prepares students with the necessary skills to be successful in the career field. Students will take coursework in theory, HVAC electrical applications, installation practices, low, medium, and high temperature commercial refrigeration and other technical skills.

The HVAC graduate will be able to work on residential heating, air conditioning, heat pump, low, medium, and high temperature commercial refrigeration systems. Install, troubleshoot, and repair equipment using copper tubing, PVC, and other accepted materials. The graduate will install a wide range of gas and electric forced-air furnaces. Students will install, troubleshoot, test, and repair electrical components on heating, air conditioning, heat pump and refrigeration systems. Learn to troubleshoot and repair various types of commercial ice machines, water coolers and common domestic and commercial HVAC/R appliances. They will be introduced to commercial air conditioning, chilled water, hydronic heating, and numerous unique refrigeration systems found in the HVAC/R industry. Students will study indoor air quality, air distribution and balancing methods used in the field. In addition, basic Direct Digital Controls (DDC) and electronic control circuits will be explored. Many of the theory lessons will be applied in lab settings and scenarios commonly found in the HVAC/R field. This program also will provide education and training in soft skills such as communication and math.

Course	No.	Course Title	Credits
General Education Requirements			
CIS	105	MICROCOMPUTER SOFTWARE APPLICATIONS I	3
ECON	202	PRINCIPLES OF MACROECONOMICS	3
ENGL	101	COMPOSITION* <i>or</i>	3
ENGL	106	WORKPLACE COMMUNICATIONS I*	
MATH	100	ELEMENTARY ALGEBRA** <i>or higher</i>	3
MATH	104	TECHNICAL MATHEMATICS** <i>or higher</i>	3
PSYC	101	GENERAL PSYCHOLOGY <i>or</i>	3
PSYC	103	HUMAN RELATIONS IN THE WORKPLACE	
Total			18
Technical Requirements			
HVAC	121	ELECTRICAL APPLICATIONS FOR HVAC I	4
HVAC	125	HVAC INSTALLATION I	3
HVAC	126	HVAC INSTALLATION I LAB	4
HVAC	135	ELECTRICAL APPLICATIONS FOR HVAC II	3
HVAC	145	HVAC INSTALLATION II	3
HVAC	146	HVAC INSTALLATION II LAB	4
HVAC	222	HVAC/R	3
HVAC	223	HVAC/R LAB	4
HVAC	225	ELECTRICAL APPLICATIONS FOR HVAC/R III	3
HVAC	232	REFRIGERATION	3
HVAC	233	REFRIGERATION LAB	4
HVAC	235	ELECTRICAL APPLICATIONS FOR HVAC/R IV	3
HVAC	240	SPECIALIZED HVAC/R EQUIPMENT	2
INT	299	INTERNSHIP (OPTIONAL)	3
Total			43-46

*Prerequisite: Acceptable ACCUPLACER score or Basic Writing.

**Prerequisite: Acceptable ACCUPLACER score or Basic Math.

Clinicals, practicums, and internships may include, but are not limited to, differential shifts (evenings, nights, weekends, and holidays) to meet industry expectations. This may require travel outside the Rapid City area.

Semester Breakdown

First Semester			Second Semester		
		CR			CR
HVAC 121	Electrical Applications for HVAC I	4	HVAC 135	Electrical Applications for HVAC II	3
HVAC 125	HVAC Installation I	3	HVAC 145	HVAC Installation II	3
HVAC 126	HVAC Installation I Lab	4	HVAC 146	HVAC Installation II Lab	4
CIS 105	Microcomputer Software Applications I	3	MATH 100	Elementary Algebra <i>or higher</i>	3
MATH 104	Technical Mathematics <i>or higher</i>	3			
Total Credit Hours		17	Total Credit Hours		13
Third Semester			Fourth Semester		
		CR			CR
HVAC 222	HVAC/R	3	HVAC 232	Refrigeration	3
HVAC 223	HVAC/R Lab	4	HVAC 233	Refrigeration Lab	4
HVAC 225	Electrical Applications for HVAC/R III	3	HVAC 235	Electrical Applications for HVAC/R IV	3
ENGL 101	Composition <i>or</i>	3	HVAC 240	Specialized HVAC/R Equipment	2
ENGL 106	Workplace Communications I		INT 299	Internship <i>optional</i>	3
PSYC 101	General Psychology <i>or</i>	3	ECON 202	Principles of Macroeconomics	3
PSYC 103	Human Relations in the Workplace				
Total Credit Hours		16	Total Credit Hours		15-18

If you are or have been convicted, pleaded guilty or no contest to, or received a suspended imposition of sentence for a felony or certain misdemeanors, you are advised that you may not be able to complete all course requirements for your chosen program, you may be prevented from taking required certification/licensure examinations in your chosen program field, and you may be prevented from gaining employment in your program field.