Air Conditioning, Heating, and Refrigeration

CAREERS IN HVAC
My Next Move

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The Air Conditioning, Heating and Refrigeration concentration, commonly referred to as HVAC, prepares graduates (AAS degree or certificate of completion) to enter the workforce as an entry-level service technician, installer, or maintenance technician.

This involves a personal journey into learning and understanding how A/C, Heating and Refrigeration equipment is designed to operate, how electrical motors operate using both electricity and magnetism, how controls are used to regulate the temperature, humidity, the introduction of fresh air, and the exhaust of stale air, how protection devices are used to protect expensive and vulnerable components how to troubleshoot problems, following a specific process, using a variety of meters and test instruments, how to design, install and commission a residential HVAC and duct system.

What Will I Learn?

The Air Conditioning, Heating and Refrigeration program teaches students the theory of refrigeration, principles of electricity, various gas and electrical laws, and how to safely use common tools of the trade to evaluate, maintain, and repair HVAC equipment.

Students will learn how to:

- Identify refrigeration components; explain operation of the basic refrigeration cycle and heat transfer; and demonstrate proper application and/or use of tools, test equipment, and safety procedures.
- Demonstrate knowledge of basic principles of electricity, electrical current, circuitry, and air conditioning devices; apply Ohm's law to electrical calculations; perform electrical continuity, voltage, and current tests with appropriate meters; and demonstrate electrical safety.
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appropriate meters; and demonstrate electrical safety.

- Identify attitudes and values that contribute to effective work habits; demonstrate how to work as part of a team; exhibit business etiquette, workplace civility, and ethics; and identify appropriate workplace attire.
- Utilize knowledge and understanding to accurately diagnose problems with Air Conditioning, Heating, refrigeration, and indoor air quality equipment using gauges, digital multimeters, ammeters, monitors and other tools.
- Effectively communicate an accurate diagnosis to clients without using technical jargon, demonstrate the ability to make recommendations for maintenance, repairs, accessories, and equipment replacement.

What Can I Do with This Course of Study?

The Manufacturing and Industrial pathway concentrating on Heating, Ventilation, Air Conditioning and Refrigeration equips graduates with the knowledge and skills to travel down a multitude of diverse career paths. There are several sectors within the HVAC industry, including residential, commercial, industrial, distribution, and manufacturing. There are various opportunities within each of these sectors. For instance, the residential, commercial, and industrial sectors have service technicians, maintenance technicians, sales representatives, customer service representatives, service managers, sales managers, and office managers. Of course, there is also the opportunity for entrepreneurship: the opportunity to own an HVAC company.

The distribution and manufacturing sectors have career opportunities like warehouse specialists, parts counter service representatives, assembly line workers, sales representatives, inventory specialists, accountants, delivery drivers, technical support staff, trainers, sales managers, executive positions, and more.

AAS: Air Conditioning, Heating, and Refrigeration — HVAC2

FOUNDATIONS: THESE ARE THE COURSES STUDENTS NEED IN ORDER TO PROGRESS IN THEIR CAREER/COLLEGE PATHWAY, AS THEY EITHER PROVIDE A CERTIFICATE OR LAY THE GROUNDWORK FOR MOVING TO THE NEXT SET OF COURSES.		
COURSE	**COURSE TITLE**	**COUNTS TOWARD**
HART 1407	Refrigeration Principles	HAC1
HART 1356	EPA Recovery Certification Preparation	HAC1
HART 1303	Air Conditioning Control Principles	HAC1
ENGL 1301	English Composition 1	
Business elective	Suggested: HRPO 1311 — Human Relations Other options: Business courses	

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COURSE	**COURSE TITLE**	**COUNTS TOWARD**
HART 1441	Residential Air Conditioning	HAC1
HART 1445	Gas and Electric Heating	HAC1
HART 2434	Advanced Air Conditioning Controls	HAC1

SBS Elective	Suggested: PSYC 2301 — Introduction to Psychology or SOCI 1301 — Introductory Sociology Other options: Any SBS core course	
BIOL 1308	Biology for Non-Science Majors	
Business Elective	Suggested: MRKG 1311 — Principles of MarketingOther options: Business courses	
General Elective	Suggested: ACCT 2401 — Principles of Accounting I — Financial Other options: Business courses	

COMPLETION: THESE ARE THE COURSES THE STUDENT NEEDS IN ORDER TO COMPLETE THE DEGREE PLAN AND PREPARE TO ENTER THE WORKFORCE.		
COURSE	**COURSE TITLE**	**COUNTS TOWARD**
Oral Communications	Suggested: SPCH 1318 — Interpersonal Communication or SPCH 1321 — Business and Professional Communication Other Options: Any other SPCH core courses	
HART 2436	Air Conditioning Troubleshooting	HAC1
HART 2445	Residential Air Conditioning Systems Design	HAC1
Creative Arts or LPC	Suggested: MUSI 1310 — American Music or ARCH 1311 Introduction to Architecture	
Business Elective	Suggested: BUSG 2309 Small Business Management/Entrepreneurship Other Options: Business courses	
General Elective	Suggested: ACNT 1339 — Payroll and Business Tax Accounting Other Business courses	

Certificate of Completion: Air Conditioning, Heating, and Refrigeration — HVAC1 −

FOUNDATIONS: THESE ARE THE COURSES STUDENTS NEED IN ORDER TO PROGRESS IN THEIR CAREER/COLLEGE PATHWAY, AS THEY EITHER PROVIDE A CERTIFICATE OR LAY THE GROUNDWORK FOR MOVING TO THE NEXT SET OF COURSES.		
COURSE	**COURSE TITLE**	**COUNTS TOWARD**
HART 1407	Refrigeration Principles	HAC1
HART 1303	Air Conditioning Control Principles	HAC1
HART 1356	EPA Recovery Certification Preparation	HAC1
HART 1441	Residential Air Conditioning	HAC1

KNOWLEDGE BUILDING: THESE COURSES FURTHER THE STUDENTS' KNOWLEDGE IN THE AREA OF STUDY AND INCREASE THEIR PREPARATION FOR THE DEGREE COMPLETION.		
COURSE	**COURSE TITLE**	**COUNTS TOWARD**

HART 1445	Gas and Electric Heating	HAC1
HART 2434	Advanced Air Conditioning Controls	HAC1
HART 2436	Air Conditioning Troubleshooting	HAC1
HART 2445	Residential Air Conditioning Systems Design	HAC1

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