



Heating, Ventilation, & Air Conditioning (HVAC)-SD (2022-2023 Catalog)

SEMESTER-BY-SEMESTER PROGRAM MAP FOR FULL-TIME STUDENTS

Courses are listed in preferred order of completion

Plans can be modified to fit student needs by adding more semesters

Choose your courses with your Advisor.

Developmental Education Courses (if required)			<input type="checkbox"/>	MATH020	Pre-Algebra
<input type="checkbox"/>	ACLS050	Introduction to Academic Literacy	<input type="checkbox"/>	MATH022	Elementary Algebra
<input type="checkbox"/>	ENGL027	Writing Skills Workshop	<input type="checkbox"/>	MATH026	Intermediate Algebra

	complete	Course #	Course Title	Credits	Pre-requisites / Co-requisites
Semester 1	<input type="checkbox"/>	COLS101	College Success	1	
	<input type="checkbox"/>	ELTC101	Electrical Fundamentals	3	
	<input type="checkbox"/>	EMEC114	Mechanical Skill for the Trades	2	
	<input type="checkbox"/>	HVAC101	Fundamentals of HVAC/R I*	4	PRE or CO: ELTC101 or instructor permission
	<input type="checkbox"/>	MATH103	Technical Mathematics	3	
	<input type="checkbox"/>	OSAH101* or OSAH102	Construction Industry Outreach Safety Education* or General Industry Outreach Safety Education	1	
			Total Semester Credits:	14	
Semester 2	<input type="checkbox"/>	CMGT104	Construction Print Reading	3	
	<input type="checkbox"/>	ELTC107	Electrical Wiring I	3	PRE: ELTC101
	<input type="checkbox"/>	HVAC102	Fundamentals of HVAC/RII	3	PRE: ELTC101, HVAC101
	<input type="checkbox"/>	HVAC124	Heating, Gas, Oil, Solar, Thermal, Air & Hydronic Systems	4	PRE: ELTC101
	<input type="checkbox"/>	HVAC140	Heat Pump Systems	2	PRE: ELTC101, HVAC101
			Total Semester Credits:	15	
		Total Degree Credits:	29		

Notes:

*In conjunction with this course (HVAC101) the non-credit seminar/testing session: ACRNC107 - EPA Refrigerant Usage Certification is scheduled.

*OSAH101 is the recommended selection

***It is the student's responsibility to be knowledgeable of NCC graduation requirements and to verify transfer requirements with the 4-year institution. Courses listed on the program map are based upon the assumption that prerequisites and courses taken in previous semesters will be successfully completed**

Program Narrative:

- As a graduate of Northampton's Heating, Ventilation and Air Conditioning (HVAC) Technology program, you will have the qualifications needed to find employment in this highly technical field. Many of our graduates command competitive salaries in facilities maintenance jobs and as service and installation technicians in heating and air conditioning service companies.
- Our program was created in response to the needs of business and industry for short-term job training programs. Students gain in-depth understanding of HVAC systems and maintenance practices at an accelerated pace.
- Our program offers the unique opportunity to learn the concepts and practices on components and equipment used in actual HVAC systems. You will also learn the proper methods of recovery and handling of refrigerants and be prepared to take the EPA Refrigerant Technician licensure test.
- Coursework includes electrical theory, heating and cooling concepts, the refrigeration cycle, equipment operation and maintenance, component specification, and diagnostic approaches. Progressive courses train in the skills related to commercial AC, residential power wiring/NEC code, oil and gas-fired heating equipment, air-to-air heat pumps, and geothermal system design and installation.
- All of the course work in this specialized diploma program can be applied toward Northampton's higher level, HVAC/R Certificate and the Associate in Applied Science (AAS) degree in Heating, Ventilation, Air Conditioning, and Refrigeration (HVAC/R) Technology

Program Learning Outcomes:

- Demonstrate an ability to work independently and collaboratively.
- Analyze and present data in an acceptable and standardized manner.
- Demonstrate a basic framework of technical vocabulary applicable to the HVAC/R field.
- Demonstrate the proficient use of the tools and diagnostic equipment utilized within the industry.
- Interpret and apply the EPA regulatory laws applicable to refrigerant handling and other environmentally hazardous materials used with HVAC/R systems.
- Be able to describe the principles of operation of residential and light commercial heating and cooling equipment.
- Demonstrate the ability to service and repair these systems utilizing industry proven methods and procedures.

Career Information: Technician Job titles related to HVAC/R education:

- HVAC/R Service
- Commercial Refrigeration
- Building Automation
- Facilities Maintenance

See <https://northampton.emsicc.com/careers/heating-and-air-conditioning-mechanic-and-installer> for information on career options and earning potential.