

# AIR CONDITIONING AND REFRIGERATION, A.A.S.

**Location(s):** WO  
**NOVA Code:** 9040

## Purpose

This curriculum is designed to prepare students for jobs in the air conditioning and refrigeration field. The second year provides students with skills that lead to leadership positions in the HVACR industry. Occupational objectives include industry licensing, advanced critical thinking skills, and state tradesman licenses in HVACR. Occupational objective includes preparing graduates with the knowledge and skills to become industry certified technicians, as well as meeting the educational requirements to be licensed as a HVACR Tradesman in Virginia.

## Credit for Prior Learning

Students in this program may be eligible for credit for prior learning and will be evaluated on a case-by-case basis by the program head.

## Transfer Information

Transfer is not the primary purpose of an A.A.S. program, but NOVA has articulation agreements that facilitate the transfer of this and other career-oriented programs to selected senior institutions. Students interested in transfer should contact a counselor or their academic advisor early in their program.

## Special Accreditation Status

The Air Conditioning and Refrigeration Associate of Applied Science is accredited by HVAC Excellence (Benchmark of Academic Excellence). The date of the last review was 2024.

## Two Years

Course	Title	Credits
<b>1st Semester</b>		
AIR 111	Air Conditioning & Refrig Controls I	3
AIR 121	Air Cond & Refrigeration I	4
ENG 111 or ENG 115	College Composition I or Technical Writing	3
Humanities/Fine Arts Elective ( <a href="https://catalog.nvcc.edu/general-education-electives/#ge_hum_fa_elect">https://catalog.nvcc.edu/general-education-electives/#ge_hum_fa_elect</a> )		3
Select one of the following:		3-4
PHY 100	Elements of Physics	1
MTH 111	Basic Technical Mathematics (or Higher)	
SDV 100	College Success Skills	1
<b>Credits</b>		<b>17-18</b>
<b>2nd Semester</b>		
AIR 122	Air Cond & Refrigeration II	4
AIR 134	Circuits And Controls I	3
AIR 154	Heating Systems I	4
AIR 276	Refrigerant Usage EPA Certification	1
CST 110	Introduction to Human Communication	3
<b>Credits</b>		<b>15</b>
<b>3rd Semester</b>		
AIR - Elective (p. 1)		4
AIR - Elective (p. 1)		4
AIR - Elective (p. 1)		3-4

AIR 238	Advanced Troubleshooting And Service	4
<b>Credits</b>		<b>15-16</b>
<b>4th Semester</b>		
AIR - Elective (p. 1)		4
AIR - Elective (p. 1)		4
AIR - Elective (p. 1)		3-4
Social/Behavioral Sciences Elective ( <a href="https://catalog.nvcc.edu/general-education-electives/#ge_soc_beh_sci_elec">https://catalog.nvcc.edu/general-education-electives/#ge_soc_beh_sci_elec</a> )		3
<b>Credits</b>		<b>14-15</b>
<b>Total Credits</b>		<b>61-64</b>

Electives should be chosen with the advice of an academic advisor to meet the requirements of the intended transfer institution.

## Air Conditioning and Refrigeration Electives

Code	Title	Credits
<b>Students who Plan a Career Path in Residential or Commercial HVAC</b>		
AIR 205	Hydronics And Zoning	4
AIR 207	Heat Loads & Psychrometrics	4
AIR 235	Heat Pumps	4
AIR 251	Air Conditioning Systems I	4
AIR 252	Air Conditioning Systems II	4
AIR 257	Gas-Fired Warm Air Furnaces	4
<b>Students who Desire a Controls Focus</b>		
AIR 207	Heat Loads & Psychrometrics	4
AIR 213	Air Cond & Refrigeration Controls III	4
AIR 231	Circuits and Controls IV	4
AIR 232	Circuits and Controls V	3
AIR 240	Direct Digital Controls (DDC) I	3
AIR 251	Air Conditioning Systems I	4
AIR 252	Air Conditioning Systems II	4