

32-601-1 HEATING, VENTILATION, & AIR CONDITIONING / REFRIGERATION (HVAC/R)
31-601-2 HVAC INSTALLATION TECHNICIAN
30-601-1 REFRIGERATION ESSENTIALS
2025-26 REQUIRED COURSES
NORTHWOOD TECHNICAL COLLEGE
FALL 2025 START
SUPERIOR



Name/ID _____

Date _____

CATALOG NUMBER	COURSE TITLE	*HOURS PER WEEK	CREDITS	REFRIGERATION ESSENTIALS TECHNICAL DIPLOMA	HVAC INSTALLATION TECHNICIAN TECHNICAL DIPLOMA <i>(Financial Aid Eligible)</i>	HEATING, VENTILATION, & AIR CONDITIONING / REFRIGERATION (HVAC/R) TECHNICAL DIPLOMA <i>(Financial Aid Eligible)</i>
FIRST TERM - FALL 2025						
32601300	Air Conditioning Fundamentals Prerequisite: Admission to HVAC/R Plan, Refrigeration Essentials Plan, or HVAC Installation Technician Plan <i>(This course will prepare you to take the NC3/Trane: Residential – Air Flow AND NC3: Building Performance Instruments (BPI) – Indoor Air Quality certifications)</i>	4 hours per week	2 credits	Refrigeration Essentials	HVAC Installation Technician	Heating, Ventilation, & Air Conditioning / Refrigeration (HVAC/R)
32601301	Basic Mechanical Fundamentals Prerequisite: Admission to HVAC/R Plan, Refrigeration Essentials Plan, or HVAC Installation Technician Plan <i>(This course will prepare you to take the NC3: Building Performance Instruments (BPI) – Leak Detection certification)</i>	6 hours per week	3 credits	Refrigeration Essentials	HVAC Installation Technician	Heating, Ventilation, & Air Conditioning / Refrigeration (HVAC/R)
32601317	Refrigeration Fundamentals Prerequisite: Admission to HVAC/R Plan, Refrigeration Essentials Plan, or HVAC Installation Technician Plan <i>(This course will prepare you to take the NC3/Trane: Residential – Refrigeration Diagnostics certification)</i>	7 hours per week	3 credits	Refrigeration Essentials	HVAC Installation Technician	Heating, Ventilation, & Air Conditioning / Refrigeration (HVAC/R)
32601303	Principles of AC/DC Corequisite: 32804325 Applied Technical Math 1 <i>(This course will prepare you to take the NC3/Snap-On: 575 Multimeter Certification)</i>	6 hours per week	3 credits	Refrigeration Essentials	HVAC Installation Technician	Heating, Ventilation, & Air Conditioning / Refrigeration (HVAC/R)
32804325	Applied Technical Math 1	6 hours per week	3 credits	Refrigeration Essentials	HVAC Installation Technician	Heating, Ventilation, & Air Conditioning / Refrigeration (HVAC/R)
	FIRST TERM TOTAL	29 hours per week		14 Credits Refrigeration Essentials	14 Credits HVAC Installation Technician	14 Credits Heating, Ventilation, & Air Conditioning / Refrigeration (HVAC/R)

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SECOND TERM - SPRING 2026						
32601304	Heating Systems Prerequisite: Admission to HVAC/R Plan or HVAC Installation Technician Plan <i>(This course will prepare you to take the NC3: Building Performance Instruments (BPI) – Flue Gas Analysis certification)</i>	4 hours per week	2 credits		HVAC Installation Technician	Heating, Ventilation, & Air Conditioning / Refrigeration (HVAC/R)
32601305	Electrical Controls & Systems	6 hours per week	3 credits		HVAC Installation Technician	Heating, Ventilation, & Air Conditioning / Refrigeration (HVAC/R)
32601306	HVAC/R Print Reading Prerequisite: Admission to HVAC/R Plan or HVAC Installation Technician Plan	4 hours per week	2 credits		HVAC Installation Technician	Heating, Ventilation, & Air Conditioning / Refrigeration (HVAC/R)
32601310	Sheet Metal Fabrication Prerequisite: 32601301 Basic Mechanical Fundamentals	4 hours per week	2 credits		HVAC Installation Technician	Heating, Ventilation, & Air Conditioning / Refrigeration (HVAC/R)
32804334	Applied Technical Math 2 Prerequisite: 32804325 Applied Technical Math 1	4 hours per week	2 credits		HVAC Installation Technician	Heating, Ventilation, & Air Conditioning / Refrigeration (HVAC/R)
32801361	Applied Communications	4 hours per week	2 credits		HVAC Installation Technician	Heating, Ventilation, & Air Conditioning / Refrigeration (HVAC/R)
	SECOND TERM TOTAL	26 hours per week			13 Credits HVAC Installation Technician	13 Credits Heating, Ventilation, & Air Conditioning / Refrigeration (HVAC/R)

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THIRD TERM - FALL 2026						
32150302	Applied IT Basics	2 hours per week	1 credit			Heating, Ventilation, & Air Conditioning / Refrigeration (HVAC/R)
32601316	Building Automation Systems Prerequisite: 32601305 Electrical Controls and Systems <i>(This course will prepare you to take the NC3/Trane: Building Automation Systems (BAS) 1 – Intro to HVAC Systems and Building Controls certification)</i>	4 hours per week	2 credits			Heating, Ventilation, & Air Conditioning / Refrigeration (HVAC/R)
32601307	Heating System Applications Prerequisites: 32601301 Basic Mechanical Fundamentals and 32601304 Heating Systems <i>(This course will prepare you to take the NC3/Trane: Residential Variable Speed Motors, NC3/Trane: Residential – Air-to-Air Heat Pumps AND NC3: Building Performance Instruments (BPI) – Installation & Diagnostics certifications)</i>	6 hours per week	3 credits			Heating, Ventilation, & Air Conditioning / Refrigeration (HVAC/R)
32601309	Control Circuit Applications Prerequisite: 32601305 Electrical Controls and Systems	6 hours per week	3 credits			Heating, Ventilation, & Air Conditioning / Refrigeration (HVAC/R)
32809380	Applied Interpersonal Skills	4 hours per week	2 credits			Heating, Ventilation, & Air Conditioning / Refrigeration (HVAC/R)
32801362	Advanced Communication Skills Prerequisite: 32801361 Applied Communications	4 hours per week	2 credits			Heating, Ventilation, & Air Conditioning / Refrigeration (HVAC/R)
	THIRD TERM TOTAL	26 hours per week				13 Credits Heating, Ventilation, & Air Conditioning / Refrigeration (HVAC/R)

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FOURTH TERM - SPRING 2027						
32601308	Electronic Energy Management Prerequisite: 32601309 Control Circuit Applications	6 hours per week	3 credits			Heating, Ventilation, & Air Conditioning / Refrigeration (HVAC/R)
32601311	Hydronic Heating Prerequisites: 32601301 Basic Mechanical Fundamentals and 32601304 Heating Systems <i>(This course will prepare you to take the NC3: Building Performance Instruments (BPI) – Fluid Integrity certification)</i>	6 hours per week	3 credits			Heating, Ventilation, & Air Conditioning / Refrigeration (HVAC/R)
32601312	Refrigeration Applications Prerequisites: 32601300 Air Conditioning Fundamentals, 32601301 Basic Mechanical Fundamentals and, 32601317 Refrigeration Fundamentals <i>(This course will prepare you to take the EPA Section 608 Technician certification and the ACCA A2L Refrigerant Training certification.)</i>	6 hours per week	3 credits			Heating, Ventilation, & Air Conditioning / Refrigeration (HVAC/R)
32601314	Heat Load Estimation Prerequisite: Admission to HVAC/R Plan	2 hours per week	1 credit			Heating, Ventilation, & Air Conditioning / Refrigeration (HVAC/R)
	1st 8 weeks					
32601315	Geothermal Systems Prerequisites: 32601301 Basic Mechanical Fundamentals, 32601317 Refrigeration Fundamentals, 32601305 Electrical Controls and Systems	8 hours per week	2 credits			Heating, Ventilation, & Air Conditioning / Refrigeration (HVAC/R)
FOURTH TERM CONTINUED ON NEXT PAGE						

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FOURTH TERM CONTINUED						
	2nd 8 weeks					
32601313	HVAC/R Electronic Troubleshooting/ Repair (WBL) Prerequisite: 32601309 Control Circuit Applications <i>(This course will prepare you to take the NC3: Building Performance Instruments (BPI) – RPM and Vibration Testing certification)</i>	8 hours per week	2 credits			Heating, Ventilation, & Air Conditioning / Refrigeration (HVAC/R)
	FOURTH TERM TOTAL	28 hours per week				14 Credits Heating, Ventilation, & Air Conditioning / Refrigeration (HVAC/R)
	TOTAL CREDITS			14 Credits Refrigeration Essentials	27 Credits HVAC Installation Technician	54 Credits Heating, Ventilation, & Air Conditioning / Refrigeration (HVAC/R)

*Hours per week represents periods of instruction and/or work-based learning hours per week (class hours). Additional time may be required outside of class to complete assignments. For more details on what you can expect outside of class, please see the "Expectations Outside of the Classroom" section of the Student Handbook.

Please be advised that low-enrollment class sections may be canceled. You will be contacted by Student Services with information on other class sections available in alternate formats.

GRADUATION REQUIREMENTS: *Although your academic advisor can provide guidance, you are ultimately responsible for selecting courses that meet a program's graduation requirements. If you do not take courses in the recommended sequence above, it may delay your completion of graduation requirements. A program plan grade point of 2.0 in a 4.0 grade system is required to graduate.*

EARN CREDIT FOR WHAT YOU ALREADY KNOW:

[Visit Credit for Prior Learning for more information](#)

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