Refrigeration, Air Conditioning & Heating Service Technician (HVAC-R) (31-401-1)

Technical Diploma
Effective 2026/2027

The course sequence shown on this sheet is the recommended path to completion. Courses will be scheduled in the terms indicated here. All courses should be taken in the order shown to help you stay on track and graduate according to your academic plan. Courses in this program may be offered in a variety or combination of formats (for example: in-person, video conferencing, online, etc.). More detailed scheduling information for this program can be found at https://www.gtc.edu/hvac. Please see your academic advisor for additional information.

K-D = Kenosha/days, E-D = Elkhorn/days F=Fall, S=Spring, SU=Summer

Term	Course Number	Credits	Course Title	Requisites (prereq- before/ coreq-with)	Notes	K-D	E-D
1	890-155	1	Gateway to Success (G2S)		• Students are required to take this course in their first semester of enrollment. Please see an advisor for details.	F	F
1	*401-310	3	Air Condition Fundamentals	Coreq: 601-116 OR 401-316	• Faculty have identified this milestone course as providing a strong foundation for success throughout the program. • Registration is limited to program students with Core-Active Status and new program students with priority placement authorization. If there are seats available during the 14 days prior to the start of the course, contact academicadvising@gtc.edu to register.	F	F
1	*401-316	3	Mechanical Fundamentals	Coreq: 601-110 OR 401-310	• Registration is limited to program students with Core-Active Status and new program students with priority placement authorization. If there are seats available during the 14 days prior to the start of the course, contact academicadvising@gtc.edu to register.	F	F
1	*401-304	3	HVAC Electricity/Electronics		• Registration is limited to program students with Core-Active Status and new program students with priority placement authorization. If there are seats available during the 14 days prior to the start of the course, contact academicadvising@gtc.edu to register.	F	F
1	*401-333	3	Refrigeration Fundamentals	Coreq: 601-110 OR 401-310; 601-116 OR 401-316	• Registration is limited to program students with Core-Active Status and new program students with priority placement authorization. If there are seats available during the 14 days prior to the start of the course, contact academicadvising@gtc.edu to register.	F	F
2	*401-301	3	AC System Diagnosis & Repair	Prereq: 601-110 OR 401-310		S	S
2	*401-321	3	Heating Systems	Prereq: 601-110 OR 401-310		S	S
2	*401-328	3	Electrical Controls & Systems	Prereq: 601-304 OR 401-304 Coreq: 804-370		S	S
2	*401-329	3	HVAC Systems	Prereq: 601-110 OR 401-310; 601-116 OR 401-316		S	S
2	*804-370	2	Mathematics I/Applied	Prereq: 854-760	• Satisfactory college placement results (through multiple measures or placement test scores) or successful remediation is required prior to enrollment. See an advisor for details.	S	S
3	*401-331	3	Heating Systems Applications	Prereq: 601-121 OR 401-321	• Students who take 601-113 (Facility Operating Engineer LP) and 601-117 (Facility Operating Engineer HP) may omit this course.	SU	SU
3	*401-347	3	Control Circuit Applications	Prereq: 601-128 OR 401-328; 804-370		SU	SU
3	*401-345	3	Electronic Energy Management	Coreq: 601-147 OR 401-347		SU	SU
3	*401-343	3	Refrigeration Applications	Prereq: 601-110 OR 401-310; 601-116 OR 401-316; 601-133 OR 401-333	• Students who take 601-113 (Facility Operating Engineer LP) and 601-117 (Facility Operating Engineer HP) may omit this course.	SU	SU

Minimum Program Total Credits Required: 39

(*) Students must achieve a combined average of 2.0 ("C") or above for this major course to meet graduation requirements.

Refrigeration, Air Conditioning and Heating Service Technician (HVAC-R) (31-401-1)

Refrigeration, Air Conditioning and Heating Technician develops the skills and knowledge necessary for state and federal certification. Theory and practical hands-on experience in the troubleshooting, repair, and installation of residential and commercial HVAC/R systems are emphasized. Students will practice on modern and advanced equipment, incorporating microprocessor controls, and building automation technology. Topics covered during lecture and lab hours include complete heating, air conditioning and refrigeration systems, how components interact, and total system performance. Refrigerant handling certification is encouraged and is dependent upon successful completion by the individual student.

Program Learning Outcomes

Graduates will be able to:
1. Install HVAC/R components
2. Service HVAC/R systems
3. Troubleshoot HVAC/R systems
4. Evaluate HVAC/R system designs

Essential Career Competencies

Gateway's six essential career competencies are the general attitudes and skills promoted and assessed by all programs. All Gateway graduates will develop skills in:
1. Communication Competence
2. Critical Thinking and Problem Solving
3. Professionalism and Career Management
4. Teamwork and Collaboration
5. Cultural Competence
6. Technology Competence

Admission Requirements
1. Students must submit an application and pay $30 fee.
2. Students must meet one of the following: minimum cumulative high school GPA of 2.6 (unweighted); earned at least 12 college credits with a minimum GPA of 2.0; or complete valid reading, writing, and math placement assessments.

Graduation Requirements
1. Minimum 39 credits with a cumulative GPA of 2.0 or above.
2. *Average of 2.0 ("C") or above for these major courses.
3. Complete 890-155 Gateway to Success (G2S) in the first semester.

For a complete list of Graduation Requirements, check the Student Handbook or Graduation Requirements.

Notes
1. Safety glasses are required in labs. If prescription safety glasses are required, allow a minimum of 90 days.

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for one year or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult My Gateway for exact fee amounts. The District reserves the right to modify, cancel, or relocate course offerings in response to factors such as low enrollment, resource availability, or other relevant considerations to ensure high-quality educational experiences. Students will be notified in writing and are encouraged to meet with their Academic Advisor to adjust their academic plan.

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