



Refrigeration, Air Conditioning & Heating Service Technician (HVAC-R) (31-401-1) Technical Diploma Effective 2025/2026

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.).

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

Term	Course #	Cr.	Course Title	Requisites (prereq- before/ coreq-with)	K-D	E-D
1	890-155	1	Gateway to Success (G2S)		F	S
1	*601-110	3	Air Condition Fundamentals	Coreq: 601-116	F	S
1	*601-116	3	Mechanical Fundamentals		F	S
1	*601-304	3	HVAC Electricity/Electronics		F	S
1	*804-370	2	Mathematics I/Applied	Prereq: 854-760	F	S
2	801-301	1	Writing Principles	Prereq: 851-760 OR 851-756	S	SU
2	*601-121	3	Heating Systems	Prereq: 601-110	S	SU
2	*601-128	3	Electrical Controls & Systems	Prereq: 601-304; Coreq: 804-370	S	SU
2	*601-129	3	HVAC Systems	Prereq: 601-110; 601-116	S	SU
2	801-302	1	Speaking Principles		S	SU
2	*601-133	3	Refrigeration Fundamentals	Prereq: 601-110; 601-116	S	SU
3	*601-131	3	Heating Systems Applications ⁴	Prereq: 601-121	SU	F
3	*601-147	3	Control Circuit Applications	Prereq: 601-128; 804-370	SU	F
3	*601-145	3	Electronic Energy Management	Coreq: 601-147	SU	F
3	*601-143	3	Refrigeration Applications ⁴	Prereq: 601-110; 601-116; 601-133	SU	F

Minimum Program Total Credits Required: 38

Notes associated with courses (identified by a superscript number at the end of the course title) are located on the back of the sheet.

Mastery of this course will put students on a path to achieve successful degree completion, on-time graduation, and enrich the college experience. Students are required to take this course in their first semester of enrollment. Please see an advisor for details.

= Milestone Course. Faculty have identified this course as providing a strong foundation for success throughout the program.

(*) indicates students must achieve a combined average of 2.0 ("C") or above for these major courses 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

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:

- Communication
- Professionalism and Career Management
- Cultural Competence
- Critical Thinking and Problem Solving
- Teamwork and Collaboration
- 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 38 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. Satisfactory college placement results (through multiple measures or placement test scores) or successful remediation is required prior to enrollment. See an advisor for details.
2. Safety glasses are required in labs. If prescription safety glasses are required, allow a minimum of 90 days.
3. A credit for prior learning assessment is available for this course. For more information, please contact cfpl@gtc.edu.
4. Students who take 601-113 (Facility Operating Engineer LP) and 601-117 (Facility Operating Engineer HP) may omit these courses.

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.