



Part-Time Pathway to Success

School of Manufacturing, Engineering, and Information Technology

Civil Engineering Technology-Highway Technology (10-607-4)

Associate of Applied Science

Effective 2022/2023

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.).

I-E = iMET Center/evenings, E-E = Elkhorn Campus/evenings, F=Fall, S=Spring, SU=Summer

| Term | Course # | Cr. | Course Title | Requisites (prereq- before/ coreq-with) | I-E | E-E |
|------|---------------|-----|--|---|-----|-----|
| 1 | 890-155 | 1 | Gateway to Success (G2S) | | F+ | F |
| 1 | *607-104 | 3 | Building Material & Construction Method ³ | | F | F |
| 1 | *607-141 | 2 | Construction Basics ³ | | F | F |
| 1 | 804-135 | 3 | Quantitative Reasoning ^{1,6} | Prereq: 834-109 | F+ | F |
| | OR 804-115 | 5 | College Technical Math 1 ^{1,6} | Prereq: 834-110 | | |
| 2 | *607-102 | 2 | Conflict Resolution in CET ^{3,6} | | S | S |
| 2 | *607-132 | 3 | Structural Mechanics ³ | Prereq: 804-115 OR 804-135 | S | S |
| 2 | *607-170 | 2 | AutoCAD for Construction Science ^{3,6} | | S | S |
| 2 | *607-175 | 3 | Material Testing | Prereq: 607-104; 607-141 | S | S |
| 3 | *607-169 | 2 | Surveying Basics ³ | | SU | SU |
| 3 | *607-176 | 1 | Drone and Lidar Surveying | | SU | SU |
| 3 | *607-187 | 2 | 3D CAD: Digital Terrain Modeling ³ | | SU | SU |
| 3 | 801-136 | 3 | English Composition 1 ^{1,6} | Prereq: 831-103 OR 831-107 | SU+ | SU |
| 4 | *607-173 | 3 | Surveying Fundamentals ³ | Prereq: 607-169; 607-187; 804-115 OR 804-135 | F | F |
| 4 | *607-177 | 2 | Concrete Repair | Prereq: 607-139 OR 607-175 | F | F |
| 4 | *607-178 | 2 | Boundary Location and Research | Prereq: 607-169 | F | F |
| 4 | *607-191 | 1 | Hydrology and Erosion Control | | F | F |
| 5 | *607-117 | 2 | Geographical Information Systems I ³ | | S | S |
| 5 | *607-136 | 2 | Construction Project Management ³ | | S | S |
| 5 | *607-161 | 2 | Legal Aspects of Land Surveying | Prereq: 607-169 | S | S |
| 5 | *607-179 | 3 | Route/Highway Design and Surveying | Prereq: 607-173; 607-187; 607-127 | S | S |
| 6 | *614-150 | 2 | 3D CAD: Building Information Modeling ³ | | SU | SU |
| 6 | 809-198 | 3 | Psychology, Introduction to ^{1,5,6} | Prereq: 838-105 OR 831-107 | SU+ | SU |
| 7 | *607-127 | 3 | Civil Engineering and Survey Drafting ³ | Prereq: 607-187 | F | F |
| 7 | 801-197 | 3 | Technical Reporting | Prereq: 801-136 | F+ | F |
| 7 | 809-195 | 3 | Economics ⁵ | Prereq: 838-105 OR 831-107 | F+ | F |
| 8 | *607-128 | 3 | Construction Estimating ³ | Prereq: 804-115 OR 804-135; Coreq: 801-136 | S | S |
| 8 | *607-154 | 2 | Sewer and Water Systems ³ | Prereq: 607-104; 804-115 OR 804-135; 607-191 | S | S |
| 8 | *607-166 | 1 | Capstone: CET-Highway Technology ³ | Prereq: Instructor Consent; Coreq: 607-150 OR 607-179; 607-154 | S | S |
| 8 | *614-138 | 1 | 3D Modeling and Virtualization ³ | Prereq: 614-150; 607-187 | S | S |

Minimum Program Total Credits Required: 65

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.

(+) indicates students may take these courses at any one of the three main campuses; Kenosha, Racine, Elkhorn or Online.

Civil Engineering Technology – Highway Technology (10-607-4)

Civil Engineering is the profession to solve physical problems related to our civilization in order to help make the lives of everyone better. The program is part of Gateway's Construction Sciences Group (CSG) of programs (see Note 4). This program focuses on a wide variety of aspects beginning with surveying, transitioning into design, and resulting in construction of public works projects. The program is designed as a fusion of education and hands-on application. Embedded in the program is the WTCS MATERIAL TESTING INSPECTOR CERTIFICATE, the educational requirements for becoming a LAND SURVEYOR, and CONSTRUCTION MANAGEMENT courses.

Program Learning Outcomes

Graduates will be able to:

1. Utilize graphic techniques to produce engineering drawings.
2. Conduct standardized field and laboratory testing on civil engineering materials.
3. Utilize modern surveying methods for land measurements and/or construction layout.
4. Estimate material quantities and costs for civil engineering projects.
5. Utilize geometric elements to develop corridors.
6. Design storm systems to meet given design requirements.
7. Determine forces and stresses in elementary structural systems.
8. Employ productivity software to solve technical problems.

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 65 credits with an average 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. This is a very intense and challenging program. Poor existing skills, especially poor math skills, can always be improved. As long as you have the heart and desire to succeed, the instructors will work with you.
3. Classes offered at Elkhorn Campus via NODAL delivery. Please see an advisor for details.
4. The programs in the Construction Science Group include: Civil Engineering Tech: Highway Technology, Architectural-Structural Engineering Technician, Civil Engineering Technology: Water, and Construction Management Technician.
5. Transfer credits in Social Science may substitute for this course. See an advisor for details.
6. A credit for prior learning assessment is available for this course. For more information, please contact cfpl@gtc.edu.
7. Students wishing to transfer onto a four-year degree and want to pursue Calculus courses at Gateway should see an advisor for transfer details regarding math class options instead of taking 804-135.
8. Safety glasses may be required in various classes after the first semester. If prescription safety glasses are required, please allow sufficient time to obtain your glasses prior to the start of the 2nd semester.
9. Field trips to local area job sites may be required as part of the class requirements.

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. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.