

Gateway Technical College  
Geospatial Surveying

Proposed Program Reduction to meet Wisconsin State Guidelines for Program hours

Below is the current course requirements for the Gateway Technical College Geospatial Surveying Program. This program was reviewed and approved by the board Surveying section in approximately 2008.

 <b>Effective 2016/2017</b>	<b>Career Cluster</b> ▶ 	<b>Career Pathway</b> ▶ <b>Design &amp; Pre-Construction</b>	<b>GEOSPATIAL SURVEYING TECHNICIAN</b> (10-607-7) <i>Associate of Applied Science Degree</i> <i>Most Courses Offered at iMET Center</i>
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	<sup>Δ</sup> <i>Suggested Sequence</i>	<input checked="" type="checkbox"/>	Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
<b>Semester 1</b>			807-103	* Introduction to Civil Engineering & Architecture		2	1-2
			807-104	* Building Material & Construction Method		3	2-2
			807-170	* AutoCAD for Construction Sciences		2	1-2
			804-115	College Technical Math 1	Prereq: 834-110 (See Note 1)	5	5-0
			809-198	Psychology, Introduction to	Prereq: 838-105 (See Note 1 & 6)	3	3-0
<b>Semester 2</b>			807-102	* Conflict Resolution in CET		2	1-2
			807-136	* Construction Project Management		2	1-2
			807-187	* 3D CAD: Digital Terrain Modeling		2	1-2
			814-150	* 3D CAD: Building Information Modeling		2	1-2
			801-136	English Composition 1	Prereq: 831-103 (See Note 1)	3	3-0
			809-196	Sociology, Introduction to	Prereq: 838-105 (See Note 1 & 6)	3	3-0
<b>Summer</b>			807-169	* Surveying Basics	Prereq: 834-110 (See Note 1)	2	1-2
			807-137	* Global Positioning Systems	Prereq: 807-169	2	1-2
<b>Semester 3</b>			807-117	* Geographical Information Systems I		2	1-2
			807-127	* Civil Engineering Drafting		3	1-4
			807-173	* Surveying Fundamentals	Prereq: 807-169	3	1-4
			807-128	* Construction Estimating	Prereq: 807-104	3	2-2
			807-189	* Geospatial Data Processing	Prereq: 807-169	2	1-2
			806-154	General Physics 1	Prereq: 804-115	4	3-2
<b>Semester 4</b>			807-118	* Geographical Information Systems II	Prereq: 807-117	2	1-2
			807-150	* Survey Construction/ Route/ Highway	Prereq: 807-173	4	2-4
			807-188	* Capstone: Geospatial Surveying Tech	Prereq: Inst. Consent	1	1-0
			807-190	* Legal Research and Boundary	Prereq: 807-169	4	2-4
			801-197	Technical Reporting	Prereq: 801-136	3	3-0
<b>Electives</b>	<b>Take 6 elective credits. Any associate degree level course may be taken as an elective.</b> <b>Suggested Electives:</b> 807-154 Sewer and Water (2 Cr) 807-132 Structural Mechanics (3 Cr) 807-119 Civil Technology/Internship (1 Cr) 814-138 3D Modeling and Virtualization (1 Cr)					6	
	<div style="text-align: center;"> <b>Registered Land Surveyor</b>   <i>This program meets the educational requirements to become a Licensed Land Surveyor in the State of Wisconsin as long as 4 of the 6 elective credits are additional math-related credits approved by the surveying instructor of the CET program.</i> </div>						

<sup>Δ</sup>*Courses may be taken out of suggested sequence as long as requisites have been met.*      **Minimum Program Total Credits Required**      **70**

To meet State of Wisconsin guidelines for total credit hours required in Associate Degrees, Gateway Technical College is proposing reducing the program from a required 70 to 64 credit hours. Gateway Technical College believes that the best way to accomplish this is to simply remove the requirement for all electives, which also contains the provision for an additional 4 credits of math.

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Geospatial Surveying

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A note about the current 5 credit math course, Gateway Technical College course 804-115, College Tech Math 1, which Gateway wants to maintain as a requirement.

The current prerequisite is: (PREREQUISITE-(834-110 Elementary Algebra with Applications) or (OPTION-TEST Test Score))

The Gateway published course description is as follows: *Topics include: solving linear, quadratic, and rational equations; graphing; formula rearrangement; solving systems of equations; percent; proportions; measurement systems; computational geometry; right and oblique triangle trigonometry; trigonometric functions on the unit circle; and operations on polynomials. Emphasis will be on the application of skills to technical problems. This course is the equivalent to College Technical Math 1A and College Technical Math 1B.*

As I have reviewed other land surveying and Civil Engineering Highway programs around the state, most programs require 6 credit hours of math. Northeast Technical College requires 10-804-196, Trigonometry with Apps, a 3 credit hour course, and 10-804-195, College Algebra with Apps, a second 6 hour course.

Gateway would like to limit the math requirement to College Tech Math 1, because the course is a comprehensive course and compares well to what is covered Trigonometry and Algebra courses of the like offered at Northeast Technical College and the other technical colleges. Adding another math requirement would mean cutting another course to maintain the new 64 credit demand even if it were a 1 credit math course.

I would like to bring one final issue to the Professional Surveying Boards attention. Gateway would like the ability for students to select Economics in lieu of Introduction to Sociology. This may help in pursuing ABET accreditation for the Geospatial Surveying program. The self-study portion of the application for accreditation is being worked on now with the firm goal of being submitted for the July 2017 deadline. However, as of October 10, 2016, no final decision has been made about whether to replace Sociology with Economics because the ramifications of transfer agreements is still be investigated.

I would like to sincerely thank the Board for their input and review of these issues.

Sincerely, Jon Hardbarger



Effective 2016/2017

Career Cluster ►



Career Pathway ►

Design & Pre-Construction

**GEOSPATIAL SURVEYING  
TECHNICIAN**

(10-607-7)

Associate of Applied Science Degree  
Most Courses Offered at iMET Center

△ Suggested Sequence	✓	Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
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△ Courses may be taken out of suggested sequence as long as requisites have been met.

**Minimum Program  
Total Credits Required**

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Effective 2016/2017

Career Cluster ▶



Career Pathway ▶

Design & Pre-Construction

# GEOSPATIAL SURVEYING TECHNICIAN

(10-607-7)

Associate of Applied Science Degree  
Most Courses Offered at iMET Center

### PROGRAM DESCRIPTION

The Geospatial Surveying Technician program focuses on a wide variety of aspects within the profession of Civil Engineering – beginning with surveying, transitioning into design, and resulting in construction. The first year classes are mostly the same for programs in the Construction Sciences Group (see Note 6). Basic skills are developed and students are exposed to all areas of the various professions. This allows the student to be able to understand and communicate across the professions, plus it allows the student to discover what area they really enjoy working in. The second year focuses on aspects specific to Geospatial Surveying. The program is designed as a fusion of education and application; hence all the core classes are tied to real world experiences with a significant influx of participation from potential future employers. Some students use this program as a place to prepare themselves to transfer to a four year university. Most, however, use this program as a means to develop the skills that allow them to obtain a productive career in various aspects of land surveying.

### PROGRAM LEARNING OUTCOMES

Graduates of the Geospatial Surveying Technician Program should be able to:

- Utilize modern surveying methods for land surveying measurements and/or construction layout.
- Process Geospatial Data.
- Apply Legal Principles of Boundary Retracement.
- Utilize geometric elements to develop alignments.
- Produce Survey Maps and Documents
- Process GIS information (Explore, Create, Analyze, and Display) in order to evaluate data geographically.
- Employ productivity software to solve technical problems.

### CORE ABILITIES

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                       | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively   | 7. Think critically and creatively                                  |
| 3. Demonstrate essential computer skills | 8. Work cooperatively   |
| 4. Demonstrate essential math skills     | 9. Value learning   |
| 5. Develop job seeking skills            |   |

### ADMISSION REQUIREMENTS

- Students must submit an application and \$30 fee.
- Students must complete reading, writing, and math skills placement assessments.
- Students must submit official high school, GED, or HSED transcripts.

### GRADUATION REQUIREMENTS

- Minimum 70 credits with an average of 2.0 or above.
- \*A 2.0 ("C") or above for these specific major core courses.

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

### NOTES

- A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
- Any course may be taken prior to enrollment in the program, assuming prerequisites and corequisites have been satisfied (or waived with department approval).
- 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.
- Classes offered at Elkhorn Campus via NODAL delivery. See [www.gtc.edu](http://www.gtc.edu) for details.
- The programs in the Construction Science Group include: Civil Engineering Tech: Highway Technology, Geospatial Surveying Technician, Architectural-Structural Engineering Technician, and Civil Engineering Technology: Fresh Water Resources.
- Transfer credits in Social Science may substitute for this course. See an advisor for details.

### OTHER INFORMATION

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor 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.

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To schedule an appointment with an advisor, please call 1-800-247-7122.

For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ . My advisor's contact information is \_\_\_\_\_ .