



### BS DEGREE - CODE #1046

Kera Mariotti, Program Coordinator

Email address: [mariotka@alfredstate.edu](mailto:mariotka@alfredstate.edu)

Governmental agencies, private industries, and individuals all benefit from the surveying and mapping of our natural resources and planning of transportation systems, recreational facilities, new cities, and land subdivisions. Using advanced surveying equipment such as the electronic total stations to measure angles and distances, the modern surveyor has learned to increase his/her productivity and measurement accuracy. Particularly exciting about the future of the surveying profession are the emerging technologies of Global Positioning Systems (GPS), Geographic Information Systems (GIS), and Land Information Systems (LIS).

This program will provide you with a thorough understanding of the basic sciences of mathematics and physics as well as applied subjects such as graphics and computer-aided drafting and design. The knowledge obtained from these basic courses is applied to a well-rounded study of modern surveying theory and practice.

A laptop computer is required for students entering the surveying engineering technology programs. Laptop specifications are available at [www.alfredstate.edu/required-laptops](http://www.alfredstate.edu/required-laptops).

### ADVANTAGES

- The student constantly applies theoretical knowledge in meaningful and comprehensive laboratory sessions. Graduates are educated in a two-fold sense, both theoretically and practically.
- Both the surveying engineering technology (AAS) and the surveying and geomatics engineering technology (BS) programs are accredited by the Engineering Technology Accreditation Commission of ABET, <http://www.abet.org>.

### PROGRAM EDUCATIONAL OBJECTIVES

Program educational objectives were established with the assistance of the Industrial Advisory Committee and are reviewed periodically. The surveying engineering technology program produces graduates who:

- Write, read, and orally present technical reports, letters, and projects that meet the standards of the profession.
- Have an understanding of and are able to implement basic field and office survey procedures.
- Are capable of performing elementary research.
- Are competent in surveying techniques.
- Recognize the need for engagement, and an ability to engage in continued formal education, as well as lifelong learning.
- Will be capable of sitting successfully for the Land Surveyor Examination.
- Have the skills to perform a land title survey in all its complexity.
- Will be capable of employing state-of-the-art surveying techniques in leading a survey crew to the accomplishment of its goal.

### OCCUPATIONAL OPPORTUNITIES

- Land surveyor (after successfully meeting state requirements)
- Surveying engineering technician
- Project surveyor
- Party chief
- Mapping technologist
- GPS surveyor

### EMPLOYMENT STATISTICS

Employment and continuing education rate of 100 percent – 100 percent are employed.

### RELATED PROGRAMS

[Building Trades: Building Construction](#)  
[Construction Management](#)

### CERTIFICATION OR LICENSURE

Both the surveying engineering technology (AAS) and the surveying and geomatics engineering technology (BS) are accredited by Engineering Technology Accreditation Commission of ABET, <http://www.abet.org>. Accreditation means that the graduates from the AAS program will receive two years of credit toward the total statutory time requirement for licensure as a land surveyor in New York State.

Graduates of the BS program will receive four years of credit toward the total statutory time requirement for licensure as a land surveyor in New York State. The BS graduates are eligible to take the first part of the NCEES licensing exam for land surveying in their senior year, eighth semester, if within 20 semester credit hours of graduation.

Additionally, graduates of the BS program will receive six years of credit toward the statutory time for licensure as a professional engineer in New York State. The BS graduates are eligible to take the first part of the NCEES licensing exam for professional engineer in the fall following their graduation.

### ARTICULATION AGREEMENTS

Alfred State accepts students from other two-year institutions as juniors into the BS surveying engineering technology program with appropriate course work and grade point averages.

### ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra, Geometry, Algebra 2/ Trigonometry, SAT and/or ACT scores with a recommended combined reading/writing and math SAT score of 1080 or a composite ACT score of 21.

Recommended: Physics

### TECHNICAL STANDARDS

Students in the surveying and geomatics program must meet the following:

- Students must have the ability to complete field work over natural terrain.
- Students must have the ability to use standard software of the profession.



## SURVEYING AND GEOMATICS ENGINEERING TECHNOLOGY - BS DEGREE

### TYPICAL EIGHT-SEMESTER PROGRAM

First			
COMP	1503	Freshman Composition	3
CIVL	1011	Civil AutoCAD	1
CIVL	1204	Surveying I	4
CIVL	1182	Civil Technology Graphics	2
MATH	1033	College Algebra	3
			13
Second			
CIVL	2204	Surveying II	4
PHYS	1024	General Physics I	4
MATH	2043	College Trigonometry	3
LITR	xxx3	Literature Elective	3
			14
Third			
CIVL	3204	Legal Asp & Prac of Land Surv	4
CIVL	3214	Geodesy	4
PHYS	2023	General Physics II	3
MATH	1063	Technical Calculus I	3
	xxx3	Gen Ed Elective 1	3
			17
Fourth			
CIVL	4204	Subdivision Theory & Appli	4
CIVL	4214	Surveying Practicum	4
CIVL	4243	Surveying Computer Appli	3
CIVL	4273	Photogrammetry	3
	xxx3	Gen Ed Elective 2	3
			17
Fifth			
SPCH	1083	Effective Speaking	3
MATH	2074	Technical Calculus II	4
CIVL	6113	Environmental Tech Concepts	3
CIVL	5114	Land Surveying	4
	OR		
CIVL	7114	Geographic Information Systems	4
COMP	5703	Technical Writing II	3
			17
Sixth			
CHEM	5013	Applied Chemical Principles	3
MATH	6114	Differential Equations	4
CISY	1113	Computer Programming I	3
OR			
CISY	1123	Intro to Programming for IT	3
CIVL	6104	Anlyls & Adjmnts of Surv Mrmnts	4
XXXX	xxx3	Gen Ed Elective	3
			17
Seventh			
MATH	7123	Statistics for Engr Technology	3
MATH	7113	Economic Analy for Engr Tech	3
CIVL	8104	Global Positioning Systems	4
CIVL	7114	Geographic Information Systems	4
OR			
CIVL	5114	Land Surveying	4
CIVL	7001	Sr Seminar & Project Design I	1

BUAD	3043	Business Law I	3
			18

### Eighth

PHYS	8013	Modern Physics	3
CIVL	8003	Sr Seminar & Project Design 2	3
CIVL	7103	Land Development & Design	3
	OR	Technical Elective	3
	xxx3	Gen Ed Elective 4	3
			12

Must meet seven of the 10 General Education areas.

Be advised that a prior felony conviction may impede a student's ability to receive licensure.

### GRADUATION REQUIREMENTS

2.0 cumulative grade point average and department requirement of 2.0 grade point average in major courses (CIVL).