



BS DEGREE - CODE #1046

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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.

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.

ENROLLMENT AND GRADUATION DATA

	Enrollment (based on Fall census)
2017	27
2016	30
2015	34
	Degrees Awarded
2016-2017	6
2015-2016	7
2014-2015	7

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 the 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, 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	3
			17

Fourth

CIVL	4204	Subdivision Theory & Appli	4
CIVL	4214	Surveying Practicum	4
CIVL	4243	Surveying Computer Appli	3
CIVL	4273	Photogrammetry & Image Interpr	3
	xxx3	Gen Ed Elective	3
			17

Fifth

CHEM	5013	Applied Chemical Principles	3
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MATH	2074	Technical Calculus II	4	CIVL	8003	Sr Seminar & Project Design 2	3
CIVL	5114	Land Surveying OR	4	XXXX	xxx3	Technical Elective (Upper)	3
CIVL	7114	Geographic Information Systems	4	XXXX	xxx3	Gen Ed Elective	3
XXXX	xxx4	Gen Ed Elective	3				12
BUAD	3043	Business Law I	3				
			17				

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).

Sixth

SPCH	1083	Effective Speaking	3
CIVL	6104	Anlyls & Adjmnts of Surv Mrmnts	4
CISY	1113	Computer Programming I	3
XXXX	xxx4	Gen Ed (Upper) (MATH 6114 recommended)	4
XXXX	xxx3	Technical or Business Elective (Upper)	3
			17

Seventh

MATH	7123	Statistics for Engr Tech & Sci	3
MATH	7113	Economic Analy for Engr Tech	3
CIVL	8104	Global Positioning Systems	4
CIVL	7114	Geographic Information Systems OR	4
CIVL	5114	Land Surveying	4
CIVL	7001	Sr Seminar & Project Design I	1
COMP	5703	Technical Writing II	3
			18

Eighth

PHYS	8013	Modern Physics	3
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