



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.

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 and geomatics engineering technology program produces graduates who:

- Write, read, and orally present technical reports, letters, and projects that meet the standards of the profession.
- Recognize the need for, 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 – 86 percent are employed; 14 percent continued their education.

ENROLLMENT AND GRADUATION DATA

	Enrollment (based on Fall census)
2020	26
2021	29
2022	29
	Degrees Awarded
2019-2020	2
2020-2021	5
2021-2022	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 and geomatics engineering technology program with appropriate course work and grade point averages.

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra, Geometry, Algebra 2

Recommended: Physics

REQUIRED COURSE PREREQUISITES

If students do not place into MATH 1033 College Algebra, MATH 1084 Calculus I, MATH 1323 Quantitative Reasoning, 1034 College Algebra of Functions, 1054 Precalculus, or 2124 Statistical Methods & Analysis, then MATH 1014 Algebra Concepts is a required prerequisite for completion of the major.

If students do not place into PHYS 1024 General Physics I or PHYS 1044 College Physics I, then PHYS 1014 Introductory Physics is a required prerequisite for completion of this major.

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.

GRADUATION REQUIREMENTS

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

REQUIRED EQUIPMENT

A tier 2 laptop computer is required for students entering the surveying engineering technology programs. Laptop specifications are available at www.alfredstate.edu/required-laptops.

OFFICE OF ACCESSIBILITY SERVICES

Students who believe they need a reasonable accommodation to properly participate in this program may contact Melanie Ryan in the Office of Accessibility Services. This office may be contacted by email at oas@alfredstate.edu or by phone at 607-587-4506. Please keep in mind that some accommodations may take time to implement, so students seeking accommodations are encouraged to contact OAS as early as possible.

**SURVEYING AND GEOMATICS ENGINEERING TECHNOLOGY - BS
DEGREE**

TYPICAL EIGHT-SEMESTER PROGRAM

First

COMP	1503	Writing Studies	3
CIVL	1021	Civil Eng Tech 1st Yr Exp	1
CIVL	1204	Surveying I	4
CIVL	1182	Civil Tech 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
GLST	2113	Global & Diverse Perspectives	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
LITR	xxx3	Literature 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
SPCH	1083	Public Speaking OR	3
XXXX	xxx3	Approved Gen Ed Equivalent	3
			17

Fifth

XXXX	xxx3	Upper Level Natural Science	3
MATH	2074	Technical Calculus II	4
CIVL	5114	Land Surveying OR	4
CIVL	7114	Geographic Information Systems	4
XXXX	xxx3	Gen Ed Elective	3
BUAD	3043	Business Law I	3
			17

Sixth

XXXX	xxx3	Gen Ed Elective	3
CIVL	6104	Anlys & Adjmnts of Surv Mrmnts	4
CISY	1113	Computer Programming I OR	3
CISY	xxx3	Programming Elective	3
XXXX	xxx4	Gen Ed (Upper) (MATH 6114 recommended)	4
XXXX	xxx3	Technical or Business Elective	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

XXXX	xxx3	Upper Level Gen Ed Elective	3
CIVL	8003	Sr Seminar & Project Design 2	3
XXXX	xxx3	Technical Elective (Upper)	3
XXXX	xxx3	Gen Ed Elective	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.

SUGGESTED TECHNICAL OR BUSINESS ELECTIVES

- CIVL 6113
- CIVL 7103
- BUAD 5000+
- TMGT 5000+
- ACCT 5000+