



AAS DEGREE - CODE #1554

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The biological science degree is a hands-on program designed to prepare you to excel in various scientific laboratories or to continue your education in a number of science or pre-professional fields. The program provides a foundation in biology, chemistry, and mathematics as well as a common core of general education courses.

ADVANTAGES

Biological science is a flexible program that can be tailored to fit the educational requirements of a variety of laboratory-related occupations and transfer opportunities.

DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAMS

Alfred State biological science graduates may enter directly into the forensic science technology BS, health sciences BS, the interdisciplinary studies BTech, or the technology management BBA degree program.

CONTINUING EDUCATION OPPORTUNITIES

The program also enables graduates to transfer to four-year programs in biology and chemistry as well as programs such as sports medicine, medical technology, ultrasound technology, and pre-professional programs (medicine, veterinary, dentistry, and pharmacy).

OCCUPATIONAL OPPORTUNITIES

- Environmental monitoring
- Pharmaceutical testing
- Wastewater treatment
- Laboratory technician

EMPLOYMENT STATISTICS

Employment and continuing education rate of 100 percent – 33 percent are employed; 67 percent continued their education.

RELATED PROGRAMS

[Forensic Science Technology \(BS\)](#)
[Health Sciences \(BS\)](#)

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra, Geometry, Algebra 2, Biology, Chemistry

Recommended: SAT and/or ACT test scores

REQUIRED COURSE PREREQUISITES

If students do not place into MATH 1033 College Algebra, MATH 1084 Calculus I, MATH 1323 Quantitative Reasoning, MATH 1034 College Algebra of Functions, MATH 1054 Precalculus, or MATH 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.

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.

TECHNICAL STANDARDS

It is essential that students in this degree program are able to fully and safely participate, with or without reasonable accommodation, in all classroom, laboratory, field, internship, and research experiences required for completion of the program. Students in this degree program should be able to:

- Function in a safe manner, not placing themselves, faculty, staff, or other students in jeopardy.
- Appropriately and safely use standard laboratory equipment, materials, and instrumentation to include possession of fine motor skills and mobility.
- Make sensory visual and auditory observations during, and interpret data from, all required laboratory assignments.
- Communicate effectively, both orally and in writing.

GRADUATION REQUIREMENTS

A minimum of 63 credit hours is required for graduation, with an overall cumulative index of 2.0 or better. A grade of "C" or better is required in courses with BIOL or CHEM prefixes.

All laboratory-based courses for this academic program must be completed in an in-person format. Laboratory-based courses in the on-line format will not fulfill degree requirements.

REQUIRED EQUIPMENT

A tier 1 laptop computer is required for students entering this degree program. Laptop specifications are available at www.alfredstate.edu/required-laptops.

BIOLOGICAL SCIENCE - AAS DEGREE

TYPICAL FOUR-SEMESTER PROGRAM

First							
BIOL	1101	Topics in General Biology	1	AGPS	1103	Soils	3
BIOL	1104	General Biology I	4	AGPS	1104	Soils	4
CHEM	1984	Chemical Principles I	4	AGPS	5003	Integrated Pest Management	3
COMP	1503	Writing Studies	3	AGRI	2013	Organic & Sustainable Ag Tech	3
MATH	xxxx	Math Elective (MATH 1033 or greater)	3-4	ANTH	5333	Medical Anthropology	3
			15-16	BIOL	1013	Essentials of Exercise Physiol	3
Second				BIOL	1113	Biology of Human Sexuality	3
BIOL	2204	General Biology II	4	BIOL	1223	Introduction to Forestry	3
LITR	xxx3	Literature Elective	3	BIOL	1304	Botany	4
CHEM	2984	Chemical Principles II	4	BIOL	1313	Nutrition	3
XXXX	xxxx	Technical Elective	2-4	BIOL	1404	Anatomy & Physiology I	4
GLST	2113	Global & Diverse Perspectives	3	BIOL	2504	Anatomy & Physiology II	4
			16-18	BIOL	2633	Histotechniques	3
Third				BIOL	2803	Environmental Science	3
BIOL	5254	Principles of Microbiology	4	BIOL	2801	Environmental Sciences Lab	1
CHEM	3514	Organic Chemistry I	4	BIOL	4403	Pathophysiology	3
SPCH	1083	Public Speaking	3	BIOL	4900	Directed Study	1
XXXX	xxx3	Technical Elective	3	BIOL	5003	Genomics	3
MATH	xxxx	Math Elective	3-4	BIOL	5013	Biotechniques	3
			17-18	BIOL	5104	Kinesiology	4
Fourth				BIOL	5223	Ecology	3
BIOL	6534	Genetics	4	BIOL	5503	Virology	3
CHEM	4524	Organic Chemistry II	4	BIOL	5900	Directed Study	1
BIOL	2111	Biological Sciences Seminar	1	BIOL	6003	Molecular and Cell Biology	3
XXXX	xxx3	Technical Elective	3-4	CHEM	4900	Directed Study	1
XXXX	xxx3	Open Elective	3-4	CHEM	5414	Analytical Principles	4
			15-17	CHEM	5900	Directed Study	1
				CHEM	6614	Instrumental Analysis	4
				CHEM	7784	Biochemistry	4
				COMP	5703	Technical Writing II	3
				ENVR	4424	Environmntl Chem & Microbiology	4
				FRSC	3113	Forensic Pathology	3
				HLTH	5113	Complementary & Altv Medicine	3
				HLTH	5233	The Culture of Healthcare	3
				MATH	1084	Calculus I	4
				MATH	2124	Statistical Methods & Analysis	4
				MEDR	1132	Essentials of Pharmacology	2
				MEDR	1133	Medical Terminology	3
				PHYS	1044	College Physics I	4
				PHYS	2044	College Physics II	4

MATH courses must be at the level of MATH 1033 college algebra or above.

Technical Electives: