

## B.A. Biology

2020-21

### WEBSITE

<https://www.swau.edu/biology>

### DEPARTMENT PERSONNEL

#### CHAIR

Arthur Schwarz, Ph.D.

#### FACULTY

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### LOCATION

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The Bachelor of Arts (BA) degree is designed to give the student maximum flexibility in their curriculum while still obtaining a four-year degree in Biology. The BA in Biology does not require as many cognates in chemistry and physics as does the BS in Biology. BA students choose a minor area of study outside Biology and learn a foreign language. Students in the Department of Biological Sciences are presented with rare leadership opportunities through the Biology Club and Pre-Health Professions Club and the potential to work with professors as laboratory and research assistants. Biology majors can also choose to receive research experience which can include cancer research, molecular biology applications, microbiological investigation, plant studies, animal ecology, and conservation, or dinosaur bone analysis, among other things, depending on the student's individual interests.

### Job Market

The career potential for graduates with a B.A. degree in Biology is very large. If a student does not wish to pursue further education after the college degree, there are jobs available as technical assistants for biotech, academic, or government positions. Alternatively, when combined with a teaching certificate, biology graduates are prepared to teach high school biology. Another career option for biology graduates is to pursue further education in the form of graduate school. A B.A. in Biology is an excellent entry point for many non-thesis, science-related master's degrees that prepare students to work in industry or government. Such students can become specialists in product development or testing, resource management, or resource policy to name a few.

### Job Outlook

Biotechnology Laboratory Technician, High School Science Teacher, Research Scientist, Public Health Officer, Health Educator, Science Writer, Occupational Therapist, SpeechLanguage Pathologist, Optometrist, Orthotist & Prosthetist. (Note that some of these careers require additional graduate training and may require additional pre-requisite coursework. Please consult with your academic advisor for career planning.)

### Earnings

Biological Technicians, Median Pay: \$43,800; Job Outlook (next 10 years): 10% (faster than average). High School Teachers, Median Pay: \$59,170; Job Outlook (next 10 years): 8% (average). Medical Scientists, Median Pay: \$82,090; Job Outlook (next 10 years): 13% (faster than average). Occupational Therapists, Median Pay: \$83,200; Job Outlook (next 10 years): 24% (much faster than average).



**Required Courses** \*Include one botany elective.

Item #	Title	Credits
BIOL 111	General Biology I	4
BIOL 112	General Biology II	4
BIOL 180	Biology Research Seminar	1
BIOL 230	Ecology	4
BIOL 320	Genetics	4
BIOL 340	Cell and Molecular Biology I	4
BIOL 419	Philosophy of Science	3
	Sub-Total Credits	24

**Biology BA Electives (6-8 credit hours)**

Item #	Title	Credits
BIOL 312	Ornithology	3
BIOL 314	Systematic Botany	4
BIOL 318	Microbiology & Immunology	4
BIOL 325	Field Ecology	4
BIOL 333	Parasitology	3
BIOL 341	Cell and Molecular Biology II	4
BIOL 345	Environment and Mankind	4
BIOL 360	Plant Biology	4
BIOL 410	Human Physiology	4
BIOL 435	Herpetology	4
BIOL 440	Mammalogy	4
BIOL 443	Comparative Vertebrate Anatomy	4
BIOL 450	Histology	4
BIOL 455	Immunology	3
BIOL 462	Ichthyology	4
BIOL 465	Plant Physiology	4
	Sub-Total Credits	6-8

**Required Cognates**

Item #	Title	Credits
CHEM 111	General Chemistry I	4
CHEM 112	General Chemistry II	4
	MATH 141 or 180	3-4
	Sub-Total Credits	16

## Sample 4 Year Curriculum

**General Education Requirements**

To view general education requirements for this major please visit: <https://catalog.swau.edu/core-curriculum-for-a-bachelors-degree>

**First Year First Semester**

Item #	Title	Credits
	Beginning Language Requirement	4
BIOL 111	General Biology I	4
BIOL 180	Biology Research Seminar	1
ENGL 121	Freshman Composition	3
MATH 110	College Algebra	3
	Sub-Total Credits	14

**First Year Second Semester**

Item #	Title	Credits
	Beginning Language Requirement	4
BIOL 112	General Biology II	4
MATH 141	Introduction to Probability and Statistics	3
	Religion GE Curriculum Guide	3
UNIV 111	Wellness for Life	2
	Sub-Total Credits	15

**Second Year First Semester**

Item #	Title	Credits
CHEM 111	General Chemistry I	4
COMM 111	Speech	3
CSIS 105	Introduction to Computing	3
ENGL 220	Research Writing	3
	Minor Elective	3
	Sub-Total Credits	16

**Second Year Second Semester**

Item #	Title	Credits
CHEM 112	General Chemistry II	4
	Fine Arts GE Curriculum Guide	3
	Kinesiology GE Curriculum Guide	1
	Minor Elective	3
	Religion GE Curriculum Guide	3
	Sub-Total Credits	14

**Third Year First Semester**

Item #	Title	Credits
BIOL 230	Ecology	4
	Elective (Upper Division)	3
	Elective (Upper Division)	3
	Minor Elective	3
	Religion GE Curriculum Guide	3
	Sub-Total Credits	16

**Third Year Second Semester**

Item #	Title	Credits
BIOL 320	Genetics	4
	Elective (Upper Division)	3
	History GE Curriculum Guide	3
	Kinesiology GE Curriculum Guide	1
	Minor Elective	3
	Sub-Total Credits	14

**Fourth Year First Semester**

Item #	Title	Credits
BIOL 340	Cell and Molecular Biology I	4
	BIOL BA Elective (x2)	6-8
	History GE Curriculum Guide	3
	Minor Elective	3
	Religion GE Curriculum Guide	3
	Sub-Total Credits	16-17

**Fourth Year Second Semester**

Item #	Title	Credits
BIOL 419	Philosophy of Science	3
	BIOL BA Elective (x2)	6-8
	Literature GE Curriculum Guide	3
	Minor Elective	3
	Social Science GE Curriculum Guide	3
	Sub-Total Credits	15-16