

B.S. Biology, Ecology and Conservation Biology Emphasis

2020-21

DEPARTMENT PERSONNEL

Chair

Arthur Schwarz, Ph.D.

Faculty

Erin Maloney, Ph.D.

Jared Wood, Ph.D.

Professor Emeriti Art Chadwick,

Ph.D.

LOCATION

Scales Hall

CONTACT

schwarz.arthur@swau.edu

(817) 202-6275

The need for passionate and skilled ecologists and conservation biologists is increasing as human populations continue to grow, expand, and consume Earth's natural resources. Ecologists study whole organisms and the living and nonliving things around them. Conservation biologists are primarily concerned with preserving biodiversity using applied science. Southwestern Adventist University's Bachelor of Science degree in Biology with an emphasis in Ecology and Conservation Biology offers students the practical and theoretical training necessary for acquiring a job in this highly competitive field. Individuals who want to help protect declining global biodiversity and who enjoy working with animals and in the field will enjoy this hands-on program. Ecology and Conservation Biology students will have the opportunity to take courses in herpetology, ichthyology, ornithology, mammalogy, botany, and wildlife management. In addition, students will receive hands-on training in field sampling techniques such as plant identification, soil analysis, ocean sampling, electrofishing, reptile handling, bird banding, and mammal camera trapping, just to name a few. Furthermore, students will have the opportunity to explore a diverse array of ecosystems on multiday field trips, meet professional field scientists, and work alongside faculty on valuable research projects.

Job Market

Fish/Wildlife Technician, Fish/Wildlife Biologist, Naturalist, Forester, Park Ranger, Game Warden, Natural Resource Manager, Environmental Scientist, Wildlife and Conservation Outreach/Advocacy Specialist, Wildlife Consultant, Environmental Policy Analyst, Environmental Economist, Educator, Zookeeper, Zoo/Museum Curator, Animal Trainer, Aquarist.

Job Outlook

Zoologists and Wildlife Biologists, Median Pay: \$62,290/year; Job Outlook (next 10 years): 8% growth (as fast as average). Animal Care and Service Workers, Median Pay: \$23,160; Job Outlook (next 10 years): 22% (much faster than average). Conservation Scientists and Foresters. Median Pay: \$60,970/year; Job Outlook (next 10 years): 6% (as fast as average).

Source: Bureau of Labor Statistics, U.S. Department of Labor, Occupational Outlook Handbook, on the Internet at <https://www.bls.gov/ooh/> (visited March 28, 2019)

Earnings

Environmental Scientists Median Pay: \$69,400; Job Outlook (next 10 years): 11% (faster than average).

Source: Bureau of Labor Statistics, U.S. Department of Labor, Occupational Outlook Handbook, on the Internet at <https://www.bls.gov/ooh/> (visited March 28, 2019)

100 W. Hillcrest Street
Keene TX 76059

(800) 433-2240 toll-free
(817) 202-6794 phone
www.swau.edu



Biology B.S. Core Curriculum Required of all B.S. students.

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 419	Philosophy of Science	3
	Sub-Total Credits	20

Required Courses

In consultation with the advisor, BIOL 480 Research in Biology, may replace one of the electives. In order for BIOL 480 to count as an elective, at least three credit hours of BIOL 480 must be completed and a final presentation must be given.

Item #	Title	Credits
BIOL 328	Biostatistics	3
BIOL 345	Environment and Mankind	4
BIOL 360	Plant Biology	4
BIOL 443	Comparative Vertebrate Anatomy	4
BIOL 475	Management of Fish & Wildlife Resources	4
	Sub-Total Credits	19

Botany electives:

Item #	Title	Credits
BIOL 314	Systematic Botany	4
BIOL 465	Plant Physiology	4
	Sub-Total Credits	4

Ecology electives:

Item #	Title	Credits
BIOL 325	Field Ecology	4
BIOL 335	Limnology	4
	Sub-Total Credits	4

Zoology electives:

Item #	Title	Credits
BIOL 312	Ornithology	3
BIOL 435	Herpetology	4
BIOL 440	Mammalogy	4
BIOL 462	Ichthyology	4
	Sub-Total Credits	7-8

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	11-12

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
BIOL 111	General Biology I	4
CHEM 111	General Chemistry I	4
ENGL 121	Freshman Composition	3
BIOL 180	Biology Research Seminar	1
	Sub-Total Credits	12

First Year Second Semester

Item #	Title	Credits
BIOL 112	General Biology II	4
CHEM 112	General Chemistry II	4
	History GE Curriculum Guide	3
	Religion GE Curriculum Guide	3
UNIV 111	Wellness for Life	2
	Sub-Total Credits	16

Second Year First Semester

Item #	Title	Credits
BIOL 230	Ecology	4
MATH 141	Introduction to Probability and Statistics	3
ENGL 220	Research Writing	3
	Communication General Education Requirement	3
	Kinesiology GE Curriculum Guide	1
	Sub-Total Credits	14

Second Year Second Semester

Item #	Title	Credits
BIOL 320	Genetics	4
BIOL 328	Biostatistics	3
	Electives for 120	3
	Fine Arts General Education Requirement	3
	Religion GE Curriculum Guide	3
	Sub-Total Credits	16

Third Year First Semester

Item #	Title	Credits
BIOL 443	Comparative Vertebrate Anatomy	4
	Religion GE Curriculum Guide	3
	Literature General Education Requirement	3
	Kinesiology GE Curriculum Guide	1
	Zoology Electives:	3-4
	Sub-Total Credits	14-15

Third Year Second Semester

Item #	Title	Credits
BIOL 345	Environment and Mankind	4
BIOL 360	Plant Biology	4
	BIOL - Ecology Elective	4
	Social Science General Education Requirement	3
	Sub-Total Credits	15

Fourth Year First Semester

Item #	Title	Credits
BIOL 475	Management of Fish & Wildlife Resources	4
	Zoology Electives:	3-4
	History GE Curriculum Guide	3
	Electives for 120	3
	Electives for 120	3
	Sub-Total Credits	16-17

Fourth Year Second Semester

Item #	Title	Credits
BIOL 419	Philosophy of Science	3
	BIOL - Botany Elective	4
	History GE Curriculum Guide	3
	Religion GE Curriculum Guide	3
	Zoology Electives:	3-4
	Sub-Total Credits	16-17