

ZOOLOGY

Many of the major challenges that confront humankind in the 21st Century center around issues with which zoologists are trained to deal. Society seeks cures for cancer and other diseases. We struggle over the moral and biological implications of genetic engineering, stem cells, IVF and cloning. We seek answers to environmental problems, the conservation of natural resources, energy shortages, population growth and famine.

Background Information

Zoology majors gain a sound education that helps them to better understand and face these issues. Many continue their education in graduate or professional schools. They become some of the physicians, researchers, educators, resource managers and policy makers who help shape the future.

Zoology, the study of animals, is a diverse field with specialties that range from cells (cytologists, molecular biologists, geneticists), to organisms (anatomists, physiologists, entomologists, mammalogists, ornithologists), to populations and their relation to each other and to their environment (ethologists, ecologists).

The Program

Zoology students receive training not only in their major but also in mathematics, the physical and social sciences and the humanities. The zoology curriculum introduces students to a broad spectrum of studies while allowing individual interests to be explored. Upper-division students may focus their interests in a particular area by pursuing individual study or research with a faculty member.

Students may choose to follow a general zoology course sequence or select from two other curriculum options: (1) pre-professional, for those who plan to enter medical, dental or optometry school; or (2) fisheries and wildlife.

Minimum requirements for the zoology major include 38 credit hours of biological sciences (there are core courses in zoology that are common to the general course sequence and to both options); 22 to 36 credit hours in chemistry, physics, mathematics and statistics; 18 to 24 credit hours in humanities and social sciences; nine credit hours in English; three credit hours in speech; and two credit hours in wellness. Required courses for the various options are listed in the sample curriculum.

Extra-Curricular Activities

Many departmental activities are available, including student-run Pre-Med, Pre-Physician Assistant, Pre-Dentistry and Wildlife Clubs, which sponsor speakers, field trips and other activities, and an annual Awards Day, which gives recognition to outstanding undergraduates.

Faculty And Facilities

The Department of Biological Sciences is located in Stevens Hall, which was dedicated in 1968 in honor of the late Dr. Orin A. Stevens, a renowned North Dakota State University naturalist. Stevens Hall houses a large lecture auditorium, classrooms, teaching and research laboratories and specialized facilities such as animal research rooms, an aquarium room, a reptile room and a vertebrate museum. Faculty members teach and advise students. In addition, they conduct research on such topics as growth and development; lakes and wetlands; control of growth, development and metabolism of trout; conservation genetics of fish; fish ecology; avian reproductive biology; physiological ecology; cancer biology; and learning in biology.

Career Opportunities

Most career opportunities require advanced training beyond the four-year baccalaureate degree. Graduates are employed in a variety of health-related occupations as doctors, dentists, optometrists and chiropractors; in state and federal agencies; in private industry; and at universities as teachers and research scientists. Some specialize in resource management and are employed as fisheries and wildlife biologists, game managers and conservation officers. Others find jobs in museums, zoos and in national and state parks.

Preparation

The zoologist must have a sound background in physics, chemistry and mathematics. Students entering the zoology program are urged to take four units of mathematics and four units of science in high school. At NDSU, pre-professional training in medical and health-related sciences requires a thorough background in basic science. In general, most professional and graduate schools require a full year of organic chemistry, physics and biology including comparative anatomy. Completion of a bachelor's degree is recommended. Students should earn a B average or above for admission to graduate and professional schools.

Sample Curriculum

General Education Requirements Credits

First Year Experience	
UNIV 189 - Skills for Academic Success.....	1
Communication	
COMM 110 - Fundamentals of Public Speaking.....	3
ENGL 110, 120 - College Composition I, II.....	3, 3
ENGL 324 - Writing in the Sciences.....	3
Quantitative Reasoning	
STAT 330 - Introductory Statistics.....	3
Science & Technology	
BIOL 315, 315L - Genetics and Lab.....	3, 1
CHEM 121, 121L - General Chemistry I and Lab.....	3, 1
CHEM 122, 122L - General Chemistry II and Lab.....	3, 1
Humanities & Fine Arts.....	6
Social & Behavioral Sciences.....	6
Wellness.....	2
Cultural Diversity.....	-
Global Perspective.....	-
Total.....	40

College and Department Requirements Credits

Hum/Soc. Science Electives (B.S. Degree).....	6
Hum/Soc. Science Electives (B.A. Degree).....	12
Second Year Language Proficiency.....	-
Total.....	6-12

Major Requirements Credits

BIOL 150, 150L - General Biology I and Lab.....	3, 1
BIOL 151, 151L - General Biology II and Lab.....	3, 1
BIOL 459 - Evolution.....	3
ZOO 491 - Seminar.....	2
MATH 146 - Applied Calculus I.....	4
Total.....	17

General Zoology Option Credits

BOT 372 - Structure and Diversity of Plants and Fungi.....	4
CHEM 341, 341L - Organic Chemistry I and Lab.....	3, 1
PHYS 120 - Fundamentals of Physics.....	3
ZOO 450 - Invertebrate Zoology.....	4
Biodiversity Elective.....	3
Cell Biology Elective.....	3-4
Ecology and Behavior Electives.....	3-4
Physiology Elective.....	3
Morphology Elective.....	3-4
Zoology Electives.....	6-9
Electives.....	21-23

Total..... 56-62

CURRICULUM TOTAL..... 122

This sample curriculum is not intended to serve as a curriculum guide for current students, but rather an example of course offerings for prospective students. For the curriculum requirements in effect at the time of entrance into a program, consult with an academic advisor or with the Office of Registration and Records.

For Further Information

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