

BIOLOGICAL SCIENCES

Biological sciences is a comprehensive field that prepares students for a variety of careers. Growing human populations and the increasing impacts associated with human activities and heightened expectations of health and environmental quality are resulting in new career opportunities in the biological sciences. These fields are growing, and our students finish their degrees well prepared to excel in these careers. The program provides hands-on experience in biological research and focuses on student experience and interests. This represents an exciting, rewarding area of science, which requires an especially strong academic background and an ability to think both analytically and comprehensively.

Career Opportunities

This option provides an excellent foundation for a variety of careers. Our students continue on for careers as medical doctors, optometrists, dentists, genetic counselors, state and federal wildlife biologists, naturalists, wildlife rehabilitators, directors of zoological parks, conservation biologists, environmental consultants, teachers, and researchers. Students leave well-prepared to continue in graduate degree programs that require a solid background in the biological sciences. In fact, most professional scientists can anticipate graduate education as being essential for career advancement.

High School Preparation

High school students should take year-long courses in biology, chemistry, physics, algebra, advanced algebra, geometry and trigonometry. If available, an advanced science course and pre-calculus are encouraged. There should be an above-average performance in such course work, as well as in the student's overall high school program. An ACT composite score of 24 or higher also is suggested.

The Program

With its many areas of emphasis, the program integrates studies in zoology, botany, and biological sciences and offers students the flexibility to customize their field of study to align course selection with educational and professional goals. The program integrates broad-based biology foundation classes with specializations, such as biomedical science or conservation biology, in later years. With appropriate course selection, the biological sciences degree provides a broad understanding of the complex relationship between the living and nonliving world. Students choose a research-based course in biology that focuses on antibiotics, wildlife ecology and conservation, STEM education, or genomics. Students also have the option to choose an emphasis in Biomedical Science, Ecology and Conservation Science, or Environmental Science. Students planning to enter a health-professional program, such as medical school, should refer to the plan of study for pre-professional programs.

Related Experiences

Career opportunities are enhanced by work experiences and extra-curricular involvement. Part-time, science-related work experiences are available in several North Dakota State University departments, as well as at the nearby U.S. Department of Agriculture laboratories. Off-campus work, such as summer employment with public agencies or private organizations, is especially valuable and has sometimes been the entry point for a first permanent position after graduation. NDSU offers many extra-curricular activities, including science-related organizations such as the Natural Resources Management Club, the Pre-Med Club, the Student Chapter of the Wildlife Society and the Range Science Club.

Accelerated Program

The Department of Biological Sciences now offers an Accelerated Bachelor and Master of Science program. The program allows students to begin thesis research during their junior year and simultaneously pursue their Bachelor of Science and Master of Science degrees in biological sciences. Students will work closely with a faculty member in our department who will serve as a mentor. The program is designed to produce a research-based master's degree. Students must be at junior standing with a minimum cumulative GPA of 3.5.

Emphases Available

A biological sciences degree is available in a traditional broad-based sequence or with emphasis on Biomedical Science, Ecology and Conservation Science, or Environmental Science. There are also minors available in biological sciences, zoology, and botany.

Biological Sciences - Standard Plan of Study

Please note this is a sample plan of study and not an official curriculum. Actual student schedules for each semester will vary depending on start year, education goals, applicable transfer credit, and course availability. Students are encouraged to work with their academic advisor on a regular basis to review degree progress and customize an individual plan of study.

First Year			
Fall	Credits	Spring	Credits
BIOL 189 Skills for Academic Success	1	BIOL 151 General Biology II	4
BIOL 150 General Biology I and 150L General Biology I Laboratory	4	and 151L General Biology II Laboratory	
CHEM 121 General Chemistry I and 121L General Chemistry I Laboratory	4	CHEM 122 General Chemistry II and 122L General Chemistry II Laboratory	4
ENGL 110 College Composition I	4	ENGL 120 College Composition II	3
MATH 103 College Algebra	3	MATH 146 Applied Calculus I or 165 Calculus I	4
	16		15
Second Year			
Fall	Credits	Spring	Credits
BIOL 315 & 315L Genetics and Genetics Laboratory	4	BIOL 252 Plant and Animal Diversity	3
BIOL 270 Antibiotic Drug Discovery or 271 Wildlife Ecology and Conservation or 272 Learning in Biology	3	PHYS 120 Fundamentals of Physics or PHYS 211 & 211L College Physics I & Laboratory and PHYS 212 & 212L College Physics II & Laboratory	3
CHEM 240 Survey of Organic Chemistry or CHEM 341 & 341L Organic Chemistry I & Laboratory or CHEM 342 & 342L Organic Chemistry II & Laboratory	3-4	BIOL 364 General Ecology or BIOL 370 Cell Biology	3
COMM 110 Fundamentals of Public Speaking	3	Gen Ed Social & Behavioral Sciences	3
Gen Ed Humanities & Fine Arts	3	Gen Ed Wellness	2
	16-17	STAT 330 Introductory Statistics	3
			17
Third Year			
Fall	Credits	Spring	Credits
BIOL 300-400 Elective	3	BIOL 300-400 Elective	3
BIOL 359 Evolution	3	Free Elective	9
ENGL 324 Writing in the Sciences	3	Gen Ed Social & Behavioral Science/Gen Ed Global Perspectives	3
Free Elective	3		
Gen Ed Humanities & Fine Arts/Gen Ed Cultural Diversity	3		
	15		15
Fourth Year			
Fall	Credits	Spring	Credits
BIOL 300-400 Elective	6	BIOL 491 Seminar	2
Free Elective	9	BIOL 300-400 Elective	3
		Free Elective	9
	15		14
Total Credits: 123-124			

Biological Sciences Emphasis Areas requirements can be found on the bulletin website in the Plan of Study:

<https://bulletin.ndsu.edu/programs-study/undergraduate/biological-science/#planofstudytext>

View NDSU equivalencies of transfer courses at: www.ndsu.edu/transfer/equivalencies

For Further Information

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DEPT LOCATION: Stevens Hall

DEPT PHONE: (701) 231-7087

DEPT WEBSITE: www.ndsu.edu/biology/