Description of Majors and Options

Bachelor of Arts in Biology

This degree provides a well-rounded education in both the liberal arts and natural sciences. The Bachelor of Arts permits students to take advanced courses from a broad spectrum of the biological sciences, including cellular and molecular biology, physiology, ecology, animal biology, plant biology, and microbiology. The emphasis on a balanced program of study enables students to explore additional academic interests from across the University. This degree prepares students for a variety of careers including, but not limited to, the health professions, business, law, and academia.

Bachelor of Science in Biology

Option I: Ecology, Evolution and Behavior

This option provides students with an education in ecological studies and biodiversity, and also emphasizes field experience. The degree requires courses in ecology and evolution, as well as advanced courses in physiology, behavior and biodiversity. Students have the option of tailoring their course and lab requirements in some of these areas to emphasize animal, plant, or ecological studies. Graduates may take positions with government agencies, consulting firms, or continue with graduate studies for academic careers at colleges, universities, museums, or other research organizations.

Option II: Human Biology

Although the title might indicate a focus on the biology of the human body, students in this degree plan explore a much wider range of topics including human evolution, genomics, genetic and hormonal control of behavior and impact on the environment. Students in this degree plan receive an interdisciplinary education about the relationship between biology and society. This option requires 32 semester hours of core studies in a variety of areas within biology, including cellular and molecular biology, physiology, and ecology and evolution. In addition, the student takes 15 semester hours in one area of specialization such as genetics, health and disease, human impact on the environment, or problems of developing countries. The different areas of concentration allow students to tailor their educational goals for a future in research, medicine, law or public affairs.
Option III: Marine and Freshwater Biology

This option requires a breadth of biology, geology, chemistry and marine science courses. It requires at least one summer at the Marine Science Institute in Port Aransas, where students examine the physiology, diversity, and ecology of aquatic organisms. The location provides immediate access to a variety of marine environments and valuable hands-on fieldwork experience. Marine biologists play an important role in the protection and management of our aquatic resources.

Option IV: Microbiology

After completion of introductory microbiology and other core courses, students in this option study the structure, growth and metabolism, physiology, and genetics of viruses, bacteria, fungi, and the diseases that they produce. Students also study how the vertebrate immune system works to combat those diseases. Micro majors take courses that explore how cells receive signals from their environments, how cells adjust to read different sets of genes, and how cells can be genetically engineered. Other topics of study include public health, tumor biology, yeast cell biology, and molecular biology. This option prepares students for a variety careers, including business, law, biotechnology, medicine, public health, or research.

Option V: Cell and Molecular Biology

While the required lecture and laboratory courses emphasize molecular and cellular biology, other required areas of study, such as genetics, evolution, developmental biology and microbiology, provide students with elective options with in these fields. Students in this degree are encouraged to pursue individual research for course credit. This degree requires 28 semester hours of chemistry, including a year of biochemistry and a year of physical chemistry. Thus, a student considering this option needs to be competent in both mathematics and the physical sciences. Upon graduation, students are well prepared for medical or graduate schools as well as medical or laboratory research careers.

Option VI: Neurobiology

This degree option addresses demand for interdisciplinary preparation in neuroscience. Students complete biology core courses in cell and molecular biology, evolution, development and physiology. Students may also take intensive courses in computer science, psychology, biochemistry and neuroscience, learning about such issues as addiction or behavior. Many students in this degree option have plans to continue in biological research or medicine.
Option VII: Plant Biology

The Plant Biology option provides students with an education in all aspects of plant biology including evolution, physiology, ecology, molecular biology, genomics and development. Careful selection of plant biology courses and electives will prepare students in one or more sub disciplines of their choice. A graduate of the Plant Biology option can expect to be positioned well for additional study in several areas, both basic and applied. Career paths include graduate school, medicine, business, biotechnology, museums, resource management, public agencies, or law. For example, training in plant biochemistry and molecular biology can be useful in pharmacology/drug discovery and design as well as preparation for graduate study. Similarly, training in ecology and evolution is excellent preparation for a career in conservation biology or graduate study in either of those fields. Most Plant Biology undergraduates work directly with faculty to perform independent field or laboratory research for credit.

Option VIII: Teaching

This option is designed to fulfill course requirements for certification as a middle grades or secondary school science teacher in Texas. Students choose composite science certification under biology as the primary teaching field or life science certification. Students are advised in the UTeach Natural Sciences Advising Center in PAI 4.02.

Option IX: Biology Honors

This is the honors program in Biology. Admission to this option requires completion of an application process. It is the most selective honors program at UT for which freshmen are eligible. The program brings together a group of science students with similar interests and similar talents. Students are advised in the Dean's Scholars Advising Center in PAI 5.60.