Major in Biological Science

Biology is the study of all living things—from bacteria and viruses that can be seen only under a microscope, to plants, animals, and humans and their relationship to their environments. Biology majors study the structure and function of cells, organ systems and tissues in animals and plants, ecology (the relationship between living things and their environment), and evolution. They learn about physiology, behavior, genetics and heredity, aquatic toxicology, microscopic organisms such as bacteria, and laboratory techniques for diverse areas ranging from field research to biotechnology. This major provides a solid foundation of understanding in the basic biological sciences. It also offers an opportunity to choose an area of emphasis within life sciences that is related to particular career goals (for example: the ecology of organisms in the field, cell and molecular biology for biomedical professions or biotechnology, aquatic biology for marine biologists, plant molecular biology for agricultural biotechnology and bioenergy, etc.).

Learning Outcomes

Students will:

• Interpret scientific data.
• Demonstrate strong organizational and laboratory skills.
• Define scientific hypotheses and design experiments to test them.
• Work effectively in groups.
• Demonstrate strong writing and oral communication skills.

Potential Occupations

Training in biology prepares students for a very large number of occupations. Some involve daily interaction with dozens of people, others can be done in relative isolation; some are highly focused, others require knowledge far beyond science. Career options related to biology include water quality assessments, field and lab technician work, biotechnology in biomedical sciences and agriculture, genetic research, agriculture, or sales (i.e., pharmaceutical, agricultural). Graduates work in small businesses, multinational corporations, academia, and government research laboratories and policy agencies. A degree in biological science offers a broad foundation for dental, medical, or veterinary school, and a number of health professions such as podiatry or optometry. Graduates often pursue advanced degrees in life sciences to carry out basic research or advance into leadership positions in industry. Participation in internships and/or laboratory research experience is highly recommended and strongly encouraged by the department to enhance practical training and development.

Combining biology with non-science skills can also lead to exciting careers. Biology and English can be incorporated into a career as a technical writer or science fiction novelist. Biology and art are combined in medical and scientific illustration. Biology and computer science can be linked in the exciting area of bioinformatics, or as an historian of science or medicine. Work in both biology and philosophy/religion can be incorporated in careers in bioethics. Biology is linked with psychology for the neuroscientist or genetic counselor. Study biology and political science to work in environmental law or be a patent lawyer in biotechnology. Try mixing biology and business to get into hospital administration, small business or biotechnology administration. Specialized master’s degrees are designed for many of these unique career paths.

Some career opportunities include, but are not limited to: aquarium, zoo, and museum worker; assistant research scientist; research technician in industry or university laboratories; biology photographer; biotechnologist; brewery laboratory assistant; consumer product researcher; marine bacteriologist, biologist, or ecologist; nuclear medicine technician; park naturalist; pharmaceutical researcher or salesperson; public health officer; science librarian; environmental educator, health specialist, or impact specialist; ecologist; fisheries biologist or conservationist; industrial hygienist; occupational therapist (with a master’s degree); and medical or clinical laboratory technician.

Concentrations

• Biological Science Concentration
• Botany Concentration