The Department of Biological Sciences provides undergraduate majors and graduate students programs that meet the educational and technological demands of many professions.

DEGREE PROGRAMS

B.A. BIOLOGY
The Bachelor of Arts in biology is designed for the student who is interested in biological sciences, but also wants a degree with a strong liberal arts component. This program provides a basic background in biology while offering the opportunity to take a wider range of classes. Graduates with this degree can enter directly into the workforce or pursue graduate/professional studies.

B.S. BIOLOGY
Within the Bachelor of Science in biology degree, students select from one of three concentrations: organismal biology, molecular and cellular biology, or pre-medicine/pre-osteopathy/pre-dentistry. For each, the focus is different, but the requirements are designed to meet the needs for immediate employment or further education. Graduates of this program are prepared for continued studies in schools of medicine, dentistry, pharmacy or other types of professional healthcare.

B.S. ZOOLOGY
The Bachelor of Science in zoology prepares students for work in all fields of zoology and is designed for those interested in veterinary medicine, work in zoological parks or employment with federal, state and local agencies.

B.S. BOTANY
With a Bachelor of Science in botany, students may choose to further their education with a graduate program or seek employment with federal, state and local agencies. Employment is possible in fields related to the scientific and economic importance of plants, including research, agriculture and environmental consulting.

B.S. ENVIRONMENTAL AND CONSERVATION BIOLOGY
The Bachelor of Science in environmental and conservation biology major is designed for students interested in a career in environmental sciences. This degree provides a depth of educational experience in biology, as well as in the supporting fields of geology, geography, chemistry and mathematics. Students select one of two concentrations: conservation biology or environmental policy and management. The conservation biology concentration is designed for students who plan to enter careers in government, private research agencies or universities. Students who select this program gain a strong background in applied ecology, restoration ecology and habitat management strategies used to sustain biological diversity.

The environmental policy and management concentration prepares students for a career at government agencies, and nonprofit or for-profit companies. Students in this program are able to address environmental issues by learning about the development and implementation of habitat management methods and public policies that promote the sustainable use of natural resources.

B.S. MEDICAL TECHNOLOGY
Medical technologists are trained to perform complex chemical, microscopic and microbiological procedures. Students majoring in medical technology combine three years of study at Kent State with a fourth year of professional training at an approved hospital. Most medical technologists find employment in hospital laboratories, independent clinical laboratories or public health agencies.

B.S. BIOTECHNOLOGY
The Bachelor of Science in biotechnology is a joint program between chemistry and biological sciences. Biotechnologists are trained to use biological systems to make or modify products or processes for specific use. Graduates can expect to find employment in research and development, bioinformatics, quality control and manufacturing.

ADDITIONAL COURSEWORK
Because of biology's analytical nature, biological science students must also gain basic proficiency in chemistry and mathematics. In addition, all students pursuing a bachelor's degree at Kent State complete a series of Kent Core requirements. All majors in the College of Arts and Sciences take courses in the humanities, fine arts and social science. Kent State stresses the ability to write well as a fundamental requirement for most professions and requires that all students complete a course in their chosen major where writing skills are emphasized.

CAREER OPPORTUNITIES
The field of biology is a fast growing area of science. It covers all aspects of life from the smallest part of a single cell to the global biosphere.

Some examples of careers include:
Animal Care (Veterinarian, Vet Tech, Zookeeper, Aquaria, and Animal Trainer)
Arboreta, Botanical Gardens and Herbariums
Education
Environmental and Conservation Organizations Federal Government (CDC, FDA, EPA and US Park Services)
Health and Allied Health Professions
Industry (Biotechnology, Pharmaceutical and Food/Drug Safety)
Local Government
Research Organizations (Profit and Non-Profit)
Sales
Scientific Administration
BIOLOGICAL SCIENCES

Excellence in Action

UNDERGRADUATE RESEARCH OPPORTUNITIES
Students are encouraged to enhance their learning experiences by engaging in research, participating in an internship, and joining student organizations.

INDIVIDUAL INVESTIGATION
Undergraduate students are encouraged to enroll in individual investigations with faculty and experience aspects of research in the laboratory or in the field. All faculty in the Department of Biological Sciences have specific research programs and expertise that represents a broad spectrum of specializations. Specific areas of strength are in neurobiology, physiology, cell and molecular biology, microbiology, ecology and evolutionary biology.

INTERNSHIPS
Internships are an opportunity to gain practical career experience at an off-campus site. Students have taken internships in veterinary clinics, hospitals, environmental consulting firms, zoos and national parks.

FACULTY ADVISORS
Faculty advisors offer career advice and assist with course selection to ensure a timely graduation. Undergraduates are assigned a faculty advisor specific to their declared biology major and are encouraged to seek them out every semester.

SPECIAL FACILITIES

CELL/MOLECULAR BIOLOGY RESOURCES
The Biological Sciences Department houses equipment available for microscopy (confocal and fluorescence), cell culture and molecular biology. Kent State science departments have also developed a strong initiative in 3-D and 4-D visualization, especially of biological materials. The facilities are used by our undergraduates and graduates for classroom and research.

THE UNIVERSITY HERBARIUM
Containing 50,000 plant specimens, the University Herbarium is one of Ohio’s major scientific museums. The collection is unparalleled in its specialization: contemporary records of Ohio Plants.

GREENHOUSE
The Herrick Conservatory maintains more than 1,400 species of plants from around the world and supports research on Lobelia, drought tolerant grain crops and native Ohio trees. The conservatory also offers display areas designed and installed by Kent State biology students including a small pond with fish, turtles and frogs.

THE ART AND MARGARET HERRICK MEMORIAL AQUATIC ECOLOGY RESEARCH FACILITY
The Aquatic Ecology Research Facility includes 10 independently flooded wetland basins. The wetlands are used to conduct population and community-level experiments under natural environmental conditions. The facility is one of the very few of these replicated experimental wetlands in the country.

3-D IMMERSIVE DEVELOPMENT FACILITY AND CLASSROOM
Kent State science departments have developed a strong initiative in 3-D and 4-D visualization, especially of biological materials. We have established a stereoscopic immersive classroom for the display of 3-D and 4-D data sets. The facility is unique in the state of Ohio and forms both a research and educational tool for the multiple scientific disciplines.

UNDERGRADUATE STUDENT ORGANIZATIONS:

<table>
<thead>
<tr>
<th>Major Core Classes:</th>
<th>Biology Club</th>
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<tbody>
<tr>
<td>Biological Diversity (4)</td>
<td>CRICK (Cuyahoga Watershed Research, Info and Conservation at Kent)</td>
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<tr>
<td>Biological Foundations (4)</td>
<td>Environmental Conservation Group</td>
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<tr>
<td>Elements of Genetics (3)</td>
<td>Regenerative Medicine Club</td>
</tr>
<tr>
<td>Evolution (3)</td>
<td>AMSA (American Medical School Association)</td>
</tr>
<tr>
<td>Writing in Biology (1)</td>
<td>Phi Delta Epsilon (International Medical Fraternity)</td>
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<tr>
<td>General Chemistry I (4)</td>
<td>PDSA (Pre-dental Student Association)</td>
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<td>General Chemistry Lab I (1)</td>
<td>Pre-Veterinary Club</td>
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<tr>
<td>General Chemistry II (4)</td>
<td>Biotechnology Club</td>
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<tr>
<td>General Chemistry Lab II (1)</td>
<td>Medical Technology Club</td>
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<tr>
<td>Analytic Geometry &amp; Calc I (5)</td>
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PROGRAM REQUIREMENTS

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For information on all of Kent State’s degrees and majors, go online to www.kent.edu/gps.