

Degrees Available at SIUE

- Bachelor of Arts in Biological Sciences
- Bachelor of Science in Biological Sciences

Specializations

- Ecology, Evolution and Environment
- Genetics and Cellular Biology
- Integrative Biology
- Medical Sciences
- Medical Technology
- Secondary Education Teacher Certification

Biological Sciences at SIUE

The biological sciences encompass the study of all life on earth. Biological sciences programs are offered through the Department of Biological Sciences in the College of Arts and Sciences. At SIUE, our diverse programs of study include specializations that allow students the opportunity to pursue any of those areas that are of interest to them. Students can customize their academic program in order to better prepare them for their chosen career.

Career Opportunities

Many careers are available for people with basic or advanced training in biology. There are opportunities in botany, ecology, education, fisheries, forensics, forestry, genetic engineering, horticulture, medical technology, microbiology, molecular biology, parasitology, physiology, wildlife management and zoology. Technical and supervisory positions are available in federal, state, industrial and university laboratories. Environment and health-related occupations almost always require sound, basic training in biology. Most students entering schools of medicine, dentistry, optometry, osteopathy, veterinary science, chiropractic and podiatry are biology majors. Basic training in biology is essential for careers in allied health sciences, including nutrition, pharmacy, occupational therapy and physical therapy.

Hands-On Learning

At SIUE, there are ample opportunities for students to participate in experiential learning. The department and outdoor venues on our beautiful campus, situated on 2,660 acres, provide excellent opportunities for innovative biological study. Our outdoor classroom consists of a 75-acre lake, a 35-acre botanical garden and 380 acres of forest and restored grasslands set aside as a nature preserve. The department is also equipped with state-of-the-art technology in microscopy, physiology, histology, cell biology, microbiology, genetics and toxicology research, and includes extensive botanical and zoological teaching collections. Opportunities for plant and animal research are available in our greenhouse and vivarium facilities.

**Faculty****Dr. Kelly Barry**

Plant Tissue Culture,
Biology Curriculum and
Teaching Strategies

Dr. Zhi-Qing Lin

Phytoremediation,
Phytoextraction,
Phytostabilization,
Phytovolatilization

Dr. Paul Brunkow

Aquatic Ecology,
Functional Ecology,
Evolutionary Ecology

Dr. Darron Luesse

Plant Molecular Biology,
Plant Tropisms

Dr. Susanne DiSalvo

Microbiology, Symbiosis

Dr. Vance McCracken

Gastrointestinal
Microbiology and Mucosal
Immunology

Dr. Betsy Esselman

Plant Conservation
Genetics, Plant
Systematics and Taxonomy

Dr. Peter Minchin

Community Ecology,
Restoration Ecology,
Biostatistics,
Ecoinformatics

Dr. Rick Essner

Ecological and Functional
Morphology

Dr. Brittany Peterson

Microbiomics, Microbial
Ecology, Insect Microbe
Interactions

Dr. Tom Fowler

Molecular Genetics and
Cell Signaling in Fungi

Dr. Amy Hubert

Molecular Biology of Stem
Cells and Regeneration

Dr. Emily Petrucci

Neurogenetics, Effects
of Alcohol On Neural
Transcription and
Behaviors

Dr. David Jennings

Endocrine Regulation,
Evolution of Life History
Strategies

Dr. Bill Retzlaff

Green Roof Systems

Dr. Luci Kohn

Quantitative morphology,
Evolution of Skeletal
Morphology

Dr. Kurt Schulz

Forest Ecology, Ecological
Restoration, Invasive
Species

Dr. Kevin Krajniak

Physiology, Neuropeptides
in Freshwater Molluscs
and Arthropods

Dr. Chris Theodorakis

Aquatic Ecotoxicology,
Conservation Genetics,
Molecular Ecology

Dr. Danielle N. Lee

Animal Behavior,
Mammalogy, Urban
Ecology

Dr. Jake Williams

Animal Physiology

Dr. Faith Liebl

Synapse Development,
Glutamate Receptors

Sample Four-Year Curriculum

Sample four-year curriculum shown below for the Bachelor of Science in Biological Sciences with Specialization in Medical Sciences. Each specialization has a different curriculum, but the first two (2) years of biology and chemistry courses are identical for all specializations. Students pursuing a Bachelor of Arts degree will complete six (6) courses in Fine and Performing Arts or Humanities, including one (1) year of the same foreign language.

Fall Semester

Spring Semester

	Fall Semester	Spring Semester
Year 1	BIOL 150 Biology I (BLS, EL) 4 CHEM 121A General Chemistry I (BPS) 4 CHEM 125A General Chemistry Lab I (EL) 1 ENG 101 English Composition I 3 MATH 145 Calculus for Life Sciences (FQR) 5 Total Credits 17	BIOL 151 Biology II (BLS, EL) 4 CHEM 121B General Chemistry II (BPS) 4 CHEM 121B General Chemistry Lab II (EL) 1 ENG 102 English Composition II 3 ACS 101 or 103 Oral Expression 3 Total Credits 15
Year 2	BIOL 220 Genetics 4 CHEM 241A Organic Chemistry I (EL) 3 RA 101 Reasoning and Argumentation or PHIL 213 3 STAT 244 Statistics (BICS) 4 Breadth Humanities (BHUM) 3 Total Credits 17	BIOL 319 Cell & Molecular Biology 4 CHEM 241B Organic Chemistry II (BPS) 3 CHEM 245 Organic Chemistry Lab (EL) 2 PHYS 131/131L or PHYS 151, 151L 5 Total Credits 14
Year 3	PHYS 132/132L or PHYS 152, 152L 5 Breadth Social Science (BSS) 3 BIOL Elective 3 Breadth Fine & Performing Arts (BFPA) 3 Total Credits 14	BIOL 340 Physiology 4 BIOL Elective (300-400 Level) 3-4 Elective 3 Experience Global Cultures (EGC) 3 Health Experience (EH) 3 Total Credits 16-17
Year 4	BIOL 492 1 BIOL Elective (400 Level) 4 CHEM 351 Biochemistry I 3 Interdisciplinary Studies (IS) 3 Elective 2 Total Credits 13	BIOL 492m or 497 2 CHEM 352 Biochemistry II 3 Experience United States Cultures (EUSC) 3 BIOL Elective (300-400 Level) 3 Elective 3 Total Credits 14

Transfer Students To maximize your transfer experience, complete the **bolded** courses/requirements pre-transfer **AND** satisfy either the Illinois Articulation Initiative (IAI) General Ed Core or receive an AA, AS, or AAT (early childhood, special ed or math) degree from an IAI community college. If 'Minor' requirements are shown, discuss careful course selection with the academic advising contact listed. Transfer Credit Equivalency Guides are located at siue.edu/transfer.

Hands-On Learning, Cont.

The Department of Biological Sciences recently moved into Science West, a modern science education facility with fully-equipped teaching and research labs. The University supports student research through the Undergraduate Research and Creative Activities (URCA) program. Our faculty members provide extensive opportunities for collaborative research, and our students frequently present their research at national and regional scientific meetings.

Admission Requirements

High school students who plan to major in one of the degree programs in biological sciences should complete at least three (3) years of college preparatory mathematics (two (2) years of algebra and one (1) year of geometry), and one (1) year each of chemistry and biology before entering the University. A fourth year of college preparatory mathematics (to include trigonometry) is strongly recommended.

Admission to a degree program in biological sciences requires an application for a major and acceptance by the department. To be admitted, students already enrolled in the University must have a minimum grade point average (GPA) of 2.0 on a 4.0 scale

in completed science and mathematics courses, as well as a cumulative GPA of 2.0 or higher on a 4.0 scale in all courses taken at SIUE. Transfer students should have a GPA of 2.0 or above on a 4.0 scale in science and mathematics courses taken at other colleges and universities.

Graduation Requirements

- Complete all specific program requirements.
- Complete all University requirements, including:
 - All general education requirements.
 - A minimum of 120 credit hours:
 - At least 30 of which must be completed at SIUE.
 - At least 60 of which must be completed at a regionally accredited 4-year institution.
 - A minimum cumulative grade point average (GPA) of 2.0 on a 4.0 scale.
 - Bachelor of Arts only: one (1) year of the same foreign language.
- File an Application for Graduation by the first day of the term in which you plan to graduate.

Contact Information

Department of Biological Sciences
 College of Arts and Sciences
 Phone: 618-650-3927