

Degrees Available at SIUE

- Bachelor of Arts, Biological Sciences
- Bachelor of Science, Biological Sciences
 - Specialization required in one of the following:
 - Ecology/Evolution/Environment
 - Genetics and Cellular Biology
 - Integrative Biology
 - Medical Science
 - Medical Technology
- Professional Educator Licensure (9-12) program

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 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

There are ample opportunities for students to participate in experiential learning at SIUE. 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. Maurina Aranda
Cell Biology Education,
STEM Education

Dr. Kelly Barry
Plant Tissue Culture,
Biology Curriculum and
Teaching Strategies

Dr. Paul Brunkow
Aquatic Ecology,
Functional Ecology,
Evolutionary Ecology

**Dr. Carrie Butts-
Wilmsmeyer**
Biostatistics and
Bioinformatics

Dr. Susanne DiSalvo
Microbiology, Symbiosis

Dr. Betsy Esselman
Plant Conservation
Genetics, Plant
Systematics and Taxonomy

Dr. Rick Essner
Ecological and Functional
Morphology

Dr. Tom Fowler
Molecular Genetics and
Cell Signaling in Fungi

Dr. Amy Hubert
Molecular Biology of Stem
Cells and Regeneration

Dr. David Jennings
Endocrine Regulation,
Evolution of Life History
Strategies

Dr. Luci Kohn
Quantitative morphology,
Evolution of Skeletal
Morphology

Dr. Kevin Krajniak
Physiology, Neuropeptides
in Freshwater Molluscs
and Arthropods

Dr. Danielle N. Lee
Animal Behavior,
Mammalogy, Urban
Ecology

Dr. Faith Liebl
Synapse Development,
Glutamate Receptors

Dr. Zhi-Qing Lin
Phytoremediation,
Phytoextraction,
Phytostabilization,
Phytovolatilization

vDr. Darron Luesse
Plant Molecular Biology,
Plant Tropisms

Dr. Vance McCracken
Gastrointestinal
Microbiology and Mucosal
Immunology

Dr. Peter Minchin
Community Ecology,
Restoration Ecology,
Biostatistics,
Ecoinformatics

Dr. Brittany Peterson
Microbiomics, Microbial
Ecology, Insect Microbe
Interactions

Dr. Emily Petrucci
Neurogenetics, Effects
of Alcohol On Neural
Transcription and
Behaviors

Dr. Bill Retzlaff
Green Roof Systems

Dr. Kurt Schulz
Forest Ecology, Ecological
Restoration, Invasive
Species

Dr. Chris Theodorakis
Aquatic Ecotoxicology,
Conservation Genetics,
Molecular Ecology

Dr. Jake Williams
Animal Physiology

Sample Curriculum for the Bachelor of Science in Biological Sciences, Medical Science

The first two years of biology and chemistry courses are identical for all specializations. Students pursuing a Bachelor of Arts will complete six courses in fine and performing arts or humanities, including one 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 FST 101 Succeeding & Engaging at SIUE 1 Total Credits 18	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 Public Speaking 3 Total Credits 15
Year 2	BIOL 220 Genetics 4 CHEM 241A Organic Chemistry I (EL) 3 RA 101 Reasoning and Argumentation or PHIL 212 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/PHYS 132L or PHYS 152, PHYS 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 1 Total Credits 12	BIOL 492M or BIOL 497 2 CHEM 352 Biochemistry II 3 Experience United States Cultures (EUSC) 3 BIOL Elective (300-400 Level) 3-4 Elective 3 Total Credits 14-15
	Total Hours	120-122

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. Visit siue.edu/transfer to find course equivalency guides.

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 years of college preparatory mathematics (two years of algebra and one year of geometry), and one 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. Once admitted, students are formally affiliated with the department and assigned an academic advisor. Advisement is mandatory. Majors are permitted to register each term only after their course request forms have been approved by an academic advisor.

Students are encouraged to select their major field of study early in their academic careers to ensure orderly progress toward meeting degree requirements. To be admitted, students already enrolled in the University must have a minimum GPA of 2.0 in completed

science and mathematics courses, as well as a cumulative GPA of 2.0 or higher in all courses taken at SIUE. Transfer students should have a 2.0 GPA 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 GPA of 2.0 (2.5 cumulative GPA is required for Professional Educator Licensure as well as a 2.5 science GPA, no grade lower than a C).
 - Bachelor of Arts only: One 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

This information is concurrent with the 2019-2020 Academic Catalog. Courses are subject to change at any time.