BIOLOGY, B.A.

Biology is a dynamic science aimed at understanding living organisms and how they interact with the environment. Saint Louis University's biology program offers courses that emphasize concepts over facts and provide a foundation for careers in the life sciences, health professions, K-12 education and advanced post-graduate study in various disciplines. The Bachelor of Arts in Biology at SLU provides maximum flexibility in selecting upper-division courses and is favored by students seeking double majors. SLU also offers a Bachelor of Science in Biology (https://www.slu.edu/arts-and-sciences/academics/degrees/undergraduate/biology-bs.php).

- SLU's biology program is enriched by interactions with the School of Medicine, Missouri Botanical Garden, Donald Danforth Plant Science Center, Saint Louis Zoo and a growing number of St. Louis-based life science companies. Research experiences and internships provide students with opportunities to study biology beyond the classroom.
- SLU's Department of Biology (https://www.slu.edu/arts-and-sciences/biology/) has a field station (https://www.slu.edu/arts-and-sciences/biology/reis-biological-station/) that provides unique opportunities for students to explore ecology, conservation and environmental science in an Ozark forest ecosystem. The field station offers students opportunities to take a summer class, conduct undergraduate research and participate in a semester-long program of field biology coursework.
- Biology students at SLU are encouraged to participate in co-curricular activities. Groups such as Beta Beta Beta, the biology honorary society, and Alpha Epsilon Delta, the preprofessional honor society, are social and academic organizations that further students' interest in biology while exposing them to its relationship with other scientific disciplines.

Curriculum Overview

The undergraduate curriculum in the Department of Biology is diverse and meets a variety of interests in the rapidly expanding fields of the biological sciences. It is also designed to provide an intensive educational experience for students in other disciplines who are interested in biology. In addition to courses in Macelwane Hall, the department offers courses at the University's Reis Biological Station (https://www.slu.edu/arts-and-sciences/biology/reis-biological-station/), located by the Huzzah Creek in the Missouri Ozarks.

The Bachelor of Arts degree in biology provides flexibility in selecting upper-level courses and is favored by students interested in double majors.

Fieldwork and Research Opportunities

The benefits of SLU's biology program include several internship and career opportunities. Advanced undergraduate students with good academic records are encouraged to apply for teaching or learning assistant positions. In addition to a stipend, students gain teaching experience and the opportunity to help others become interested in biology.

Biology majors can enroll in courses that provide credit for structured internships through collaborations with various local organizations, including the Missouri Botanical Garden, Saint Louis Zoo, Sigma-Aldrich, Bayer and firms in the growing biotechnology field.

Careers

SLU's biology major develops strong critical thinking and problem-solving skills that provide excellent preparation for professional schools, such as:

- Medical school
- Veterinary science school
- Dental school
- Optometry school
- Graduate school in a broad range of disciplines

The skills biology majors gain also open the door to a wide variety of career options in health care, biotechnology, environmental management, conservation, education and the pharmaceutical industry.

Recent SLU biology majors have received grants from Sigma Xi and the National Science Foundation and prestigious fellowships from the National Science Foundation, Fulbright Scholar Program, Mayo Clinic, Smithsonian Institution, NeuroSURF and the American Society for Microbiology.

Admission Requirements

Begin Your Application (https://www.slu.edu/apply.php)

Saint Louis University also accepts the Common Application and the Coalition Application.

Freshman

All applications are thoroughly reviewed with the highest degree of individual care and consideration to all credentials that are submitted. Solid academic performance in college preparatory coursework is a primary concern in reviewing a freshman applicant's file.

To be considered for admission to any Saint Louis University undergraduate program, applicants must be graduating from an accredited high school, have an acceptable HiSET exam score or take the General Education Development (GED) test.

Transfer

Applicants must be a graduate of an accredited high school or have an acceptable score on the GED or HiSET.

Students who have attempted fewer than 24 semester credits (or 30 quarter credits) of college credit must follow the above freshmen admission requirements. Students who have completed 24 or more semester credits (or 30 quarter credits) of college credit must submit transcripts from all previously attended college(s).

In reviewing a transfer applicant's file, the Office of Admission holistically examines the student's academic performance in college-level coursework as an indicator of the student's ability to meet the academic rigors of Saint Louis University. Where applicable, transfer students will be evaluated on any courses outlined in the continuation standards of their preferred major.

International Applicants

All admission policies and requirements for domestic students apply to international students along with the following:

- Demonstrate English Language Proficiency (https://catalog.slu.edu/academic-policies/office-admission/undergraduate/english-language-proficiency/)

- All academic records must include an English translation. An official course-by-course transcript evaluation may be required and accepted.

Tuition

Tuition/Fee	Cost Per Year
Undergraduate Tuition	$58,960
University Fees	$1,000

Additional charges may apply. Other resources are listed below:

Information on Tuition and Fees (https://catalog.slu.edu/academic-policies/student-financial-services/tuition/)

Miscellaneous Fees (https://catalog.slu.edu/academic-policies/student-financial-services/fees/)

Information on Summer Tuition (https://catalog.slu.edu/academic-policies/student-financial-services/tuition-summer-current/)

Scholarships and Financial Aid

There are two principal ways to help finance a Saint Louis University education:

- **Scholarships:** Scholarships are awarded based on academic achievement, service, leadership and financial need.
- **Financial Aid:** Financial aid is provided through grants and loans, some of which require repayment.

Saint Louis University makes every effort to keep our education affordable. In fiscal year 2025, 99.6% of first-time freshmen and 92% of all students received financial aid (https://www.slu.edu/financial-aid/) and students received more than $517 million in aid University-wide.

For priority consideration for merit-based scholarships, apply for admission by Dec. 1 and complete a Free Application for Federal Student Aid (FAFSA) by Feb. 1.

For more information on scholarships and financial aid, visit the Office of Student Financial Services (https://www.slu.edu/financial-aid/).

Learning Outcomes

1. **Graduates will know core concepts of biology at all levels of biological organization.** *(Students will demonstrate their knowledge of the five core conceptual areas of biology identified by the Vision and Change report (AAAS, 2011): structure and function; information flow and storage; evolution; transformations of energy and matter; systems) at the cellular/molecular, organismal and ecosystem levels).*
2. **Graduates will apply knowledge of biology and scientific ways of thinking to reason about complex questions.** *(Students will apply their understanding of biology and scientific reasoning skills to work on questions that require applying fundamental paradigms and ways of thinking across diverse biological systems. Application problems may require, for example, that students construct models, provide explanations, analyze texts or figures, recognize patterns, make inferences and predictions. Application problems should range from course- and content-specific questions to broader social, environmental and ethical questions).*
3. **Graduates will use the tools of biology.** *(Students will acquire and practice biology laboratory and/or field techniques, manipulate and interpret data, and practice drawing conclusions from evidence).*

Requirements

Biology students must complete a minimum total of **48 credits** for the major, **25** of which must be in BIOL subject code at the 3000 level or above.

Code	Title	Credits
University Undergraduate Core (https://catalog.slu.edu/academic-policies/academic-policies-procedures/university-core/)		**32-35**
Major Requirements		**48**
BIOL 1240 & BIOL 1245	General Biology: Information Flow and Evolution and Principles of Biology I Laboratory	4
BIOL 1260 & BIOL 1265	General Biology: Transformations of Energy and Matter and Principles of Biology II Laboratory	4
BIOL 3010	Evolutionary Biology	3
BIOL 3020	Biochemistry and Molecular Biology	3
BIOL 3030	Principles of Genetics	3
BIOL 3040	Cell Structure & Function	3
BIOL 3070	General Ecology	3
CHEM 1110 & CHEM 1115	General Chemistry 1 and General Chemistry 1 Laboratory	4
CHEM 1120 & CHEM 1125	General Chemistry 2 and General Chemistry 2 Laboratory	4
MATH 1510	Calculus I	4
Statistics Course		
STAT 1300	Elementary Statistics with Computers	3
or BIOL 4790	Biometry	
or BST 3100	Applied Biostatistics I	
Biology Elective Courses		*10*
Choose a minimum of 10 credits of upper division elective courses (numbered BIOL 3060-BIOL 4980)		
One of these courses must be a structured laboratory course		
A total of 3 credits of BIOL 3970 Independent Research in Biology, BIOL 4970 Advanced Independent Research, BIOL 4980 Advanced Independent Study, and Internship courses (BIOL 3910-3919 and BIOL 4910-4919) can be counted toward the B.A. degree. These courses do not count as structured lab courses.		
University Electives		**37-40**
Total Credits		**120**

Independent Research

A total of 3 credits of BIOL 3970 Independent Research in Biology (1-3 cr), BIOL 4970 Advanced Independent Research (1-4 cr), and/or BIOL 4980 Advanced Independent Study (1-3 cr) can be counted toward the B.A. degree. These courses do not count as structured lab courses.

Continuation Standards

Students must have a 2.00 grade point average (GPA) in all courses used to fulfill major requirements. Students who fall below the 2.0 GPA in major coursework will be placed on program probation. If a student's major GPA falls below a 2.00 for two consecutive semesters, the student will be eligible for dismissal from the major.

Roadmap

This roadmap is just one example of a semester-by-semester plan of study for this program. There are other plans students can and do take. The plan of study for each particular student is established in consultation with each student's academic advisor; *this roadmap does not replace academic advising appointments.*

Roadmap notes:

- This Roadmap assumes full-time enrollment unless otherwise noted.
- Courses/Milestones marked with an "!" are critical and must be completed in the semester listed in the Roadmap to ensure a timely graduation.
- Course availability and sequencing are subject to change.

Course	Title	Credits
Year One		
Fall		
BIOL 1240 & BIOL 1245	General Biology: Information Flow and Evolution and Principles of Biology I Laboratory (BIOL 1240 satisfies CORE 3800)	4
CHEM 1110 & CHEM 1115	General Chemistry 1 and General Chemistry 1 Laboratory	4
CORE 1000	Ignite First Year Seminar (Must be taken in first 36 credit hours at SLU / Cannot carry attributes)	2-3
CORE 1500	Cura Personalis 1: Self in Community (Must be taken in first 36 credit hours at SLU / Cannot carry attributes / Must be taken at SLU)	1
CORE 1900	Eloquentia Perfecta 1: Written and Visual Communication (Should be taken in first 36 credit hours at SLU / Cannot carry attributes)	3
General Electives		1
	Credits	**15-16**
Spring		
Participation in First-year Mentoring Events		
BIOL 1260 & BIOL 1265	General Biology: Transformations of Energy and Matter and Principles of Biology II Laboratory	4
CHEM 1120 & CHEM 1125	General Chemistry 2 and General Chemistry 2 Laboratory	4
CORE 1600	Ultimate Questions: Theology	3
General Electives		4
	Credits	**15**
Year Two		
Fall		
Participation in Second-year Mentoring		
BIOL 3020	Biochemistry and Molecular Biology	3
MATH 1510	Calculus I (satisfies CORE 3200)	4
CORE 1700	Ultimate Questions: Philosophy	3
CORE 1200	Eloquentia Perfecta 2: Oral and Visual Communication	3
General Electives		2
	Credits	**15**
Spring		
BIOL 3040	Cell Structure & Function	3
Statistics Elective (p. 3)		3-4
CORE 2500	Cura Personalis 2: Self in Contemplation	0
General Electives		9
	Credits	**15-16**
Year Three		
Fall		
BIOL 3010	Evolutionary Biology	3
Biology Elective		3
CORE 3400	Ways of Thinking: Aesthetics, History, and Culture	3
General Electives		6
	Credits	**15**
Spring		
BIOL 3030	Principles of Genetics	0-3
Biology Elective		3
CORE 3600	Ways of Thinking: Social and Behavioral Sciences	3
CORE 4000	Collaborative Inquiry	2-3
General Electives		7
	Credits	**15-19**
Year Four		
Fall		
BIOL 3070	General Ecology	3
Laboratory Elective (p. 3)		1-5
CORE 3500	Cura Personalis 3: Self in the World	1
General Electives		10
	Credits	**15-19**
Spring		
Biology Elective		3
General Electives		12
	Credits	**15**
	Total Credits	**120-130**

[1] See information in the program notes.

Program Notes

Statistics Electives

Code	Title	Credits
STAT 1300	Elementary Statistics with Computers	3
BIOL 4790	Biometry	4
BST 3100	Applied Biostatistics I	3

Laboratory Electives

Code	Title	Credits
BIOL 3060	Cell Structure & Function Laboratory	1
BIOL 3100	Experiments in Genetics Lab	1
BIOL 3260	Biology of Plants & Fungi	4
BIOL 3420	Comparative Anatomy of the Vertebrates	5
BIOL 3470	General Physiology Laboratory	1
BIOL 3550X	Neuroscience Laboratory	1

BIOL 4050	Molecular Techniques Lab	2
BIOL 4090	Plant Ecology	4
BIOL 4100	Natural History of Vertebrates	4
BIOL 4115	Forest Park Living Lab Field Ecology Techniques	1
BIOL 4120	Field Botany	5
BIOL 4130	Field Mammalogy	5
BIOL 4140	Field Ornithology	5
BIOL 4160	Microbial Ecology and Molecular Evolution	4
BIOL 4200	Aquatic Ecology	4
BIOL 4260	Biology of Amphibians and Reptiles	4
BIOL 4280	Biology of Fishes	4
BIOL 4320	Cave Biology	4
BIOL 4330	Spring Flora of the Ozarks	4
BIOL 4635	Immunobiology Lab	1
BIOL 4370	Animal Behavior Lab	1
BIOL 4420	Antibiotic Resistance and Antibiotic Discovery	2
BIOL 4440	Vertebrate Histology: Structure and Function of Tissues	4
BIOL 4610	Developmental Biology Lab	2
BIOL 4650	General Microbiology Laboratory	2
BIOL 4760	General Ecology Laboratory	1

2+SLU

2+SLU programs provide a guided pathway for students transferring from a partner institution.

- Biology, B.A. (STLCC 2+SLU) (https://catalog.slu.edu/academic-policies/office-admission/undergraduate/2plusslu/stlcc/biology-ba/)

Madrid

Biology is a fast-growing field of science. Important social issues such as developing cures for widespread diseases like cancer, fuel alternatives, managing natural resources, genetically modified food sources, or climate change can only be addressed by professionals who are well-educated in biology. Biology is a dynamic science aimed at understanding living organisms and how they interact with the environment.

Saint Louis University-Madrid's biology program offers courses that emphasize concepts over facts and aim to provide a foundation for careers in the life sciences, health professions, education and advanced post-graduate study in various disciplines. The B.A. in biology at SLU-Madrid provides maximum flexibility in selecting upper-division courses and is favored by students seeking double majors. It also provides a solid foundation in biological sciences, serving as a gateway to graduate studies and preparing students for advanced academic and professional opportunities.

Curriculum Overview

SLU-Madrid B.A. in biology program is supported by state-of-the-art laboratories that meet the highest teaching standards. These advanced facilities provide students with hands-on experience using cutting-edge technology and equipment, fostering a dynamic learning environment that bridges theory and practice.

SLU-Madrid's academic curriculum in biology is completely integrated with that of SLU-St. Louis. Therefore, students can complete the B.A. in biology at SLU-Madrid, and they may also transfer freely between the two sites throughout the undergraduate degree program.

Faculty

The faculty at Saint Louis University-Madrid are experts in their respective fields. They are internationally recognized teachers, researchers and mentors. Learn about our faculty members (https://www.slu.edu/madrid/academics/faculty/faculty-profiles.php), including their education, credentials, experience and contact information.

Faculty Research

The SLU-Madrid faculty maintains robust programs of research in a variety of fields. See below for more data.

Find Faculty Research Information (https://www.slu.edu/madrid/academics/faculty/faculty-research.php)

Find Research Resources (https://www.slu.edu/madrid/academics/faculty/research-resources.php)

Fieldwork, Internships and Careers

The Department of Biology at SLU-Madrid organizes visits to sites in Madrid and Spain where students integrate the biology courses in a hands-on way: Grefa (a wildlife recovery center and hospital for wild animals), Tablas de Daimiel National Park, Madrid Zoo, Royal Botanical Garden, among others.

SLU's biology major develops strong critical thinking and problem-solving skills that provide excellent preparation for professional schools, such as:

- Medical school
- Veterinary science school
- Dental school
- Optometry school
- Graduate school in a broad range of disciplines

Students not pursuing a degree in the medical and health professions at Saint Louis University must contact other institutions for admission information. Completing the premed prerequisite coursework does not guarantee entry into a medical school in the U.S. unless you have successfully completed the selection process of that medical school.

The skills biology majors gain also open the door to a wide variety of career options in health care, biotechnology, environmental management, conservation, education and the pharmaceutical industry.

Admission

SLU-Madrid Application (https://www.slu.edu/madrid/apply.php)

Application Deadlines

- April 1 - Fall admission (July 1 for EU students)
- Aug. 1 - Spring admission (Nov. 1 for EU students)
- March 1 - Summer sessions (for applicants who require a student visa)
- April 15 - Summer sessions (for applicants who do not require a student visa)

Contact Us

Office of Admissions
Avenida del Valle, 34
28003 Madrid, Spain
P. (+34) 91 554 58 58
admissions-madrid@slu.edu
Office Hours: Mondays through Fridays: 9 a.m. to 6 p.m. (3 p.m. on Fridays from May 15 - Sept. 1)

Tuition and Fees

SLU-Madrid is committed to providing a quality Jesuit education at an affordable price. Tuition rates at SLU-Madrid are approximately 40% lower than at comparable private universities in the U.S.

If you have questions or would like to speak with a financial aid officer, email us at financialaid-madrid@slu.edu.

- Tuition and Fees (https://www.slu.edu/madrid/admissions/tuition-fees.php)
- Scholarships and Financial Aid (https://www.slu.edu/madrid/admissions/scholarships-financial-aid.php)

Contact Us

For additional information about this program, please contact biology@slu.edu or call 314-977-3900.