CHEMISTRY, B.A.

A Bachelor of Arts in Chemistry from Saint Louis University provides excellent preparation for students seeking employment in industry (chemical, pharmaceutical, agriculture, etc.) or the government (Department of Defense labs, regulatory agencies, law enforcement). It can also serve as a solid foundation for students who want to continue their studies in professional (medical, dental, veterinary, law, etc.) or graduate school.

SLU's Department of Chemistry places a great emphasis on undergraduate research. Chemistry majors have ample opportunity to pursue research projects under the close mentorship of full-time faculty members. Students use a variety of specialized equipment in laboratories and research.

Program Highlights

- SLU's chemistry program provides a rigorous curriculum resulting in graduates who are competitive for employment in STEM areas.
- Students in upper-level chemistry courses enjoy small classes and personalized attention.
- Chemistry students at SLU have opportunities to strengthen their scientific communication skills through research activities that pair an undergraduate with a faculty researcher.
- SLU offers a unique mentoring program to guide and support students in reaching their professional goals throughout all four undergraduate years.

Curriculum Overview

- **First Year**: General Chemistry 1 and 2, Calculus I and II
- **Second Year**: Organic Chemistry 1 and 2, Analytical Chemistry 1, Engineering Physics I and II
- **Third Year**: Physical Chemistry 1 and 2
- **Fourth Year**: Inorganic Chemistry and chemistry elective

Fieldwork and Research Opportunities

Benefits of SLU's B.A. in chemistry program include internship and career opportunities. Selected undergraduate students can apply to work with faculty as laboratory assistants. Lab assistants receive a stipend. Internships in the St. Louis area are also available.

Undergraduates who study chemistry at SLU can attend professional meetings and present their research results. SLU students have presented numerous talks and poster presentations at regional and national meetings of the American Chemical Society and other scientific conferences in recent years.

Careers

Career options in chemistry include:

- Education
- Chemical research and development in industry or government laboratories
- Pharmaceutical research and drug development
- Environmental research
- Management and administration in the chemical industry
- Chemical and pharmaceutical sales

Other graduates continue through law school and specialize in patent or environmental law. The public health sector is also a common area for chemists to work.

Admission Requirements

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

Saint Louis University also accepts the Common 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.

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/)
- Proof of financial support must include:
  - A letter of financial support from the person(s) or sponsoring agency funding the time at Saint Louis University
  - A letter from the sponsor's bank verifying that the funds are available and will be so for the duration of study at the University
- Academic records, in English translation, of students who have undertaken postsecondary studies outside the United States must include the courses taken and/or lectures attended, practical laboratory work, the maximum and minimum grades attainable, the grades earned or the results of all end-of-term examinations, and any honors or degrees received. WES and ECE transcripts are accepted.

Tuition

Tuition	Cost Per Year
Undergraduate Tuition	$54,760

Additional charges may apply. Other resources are listed below:

Net Price Calculator (https://www.slu.edu/financial-aid/tuition-and-costs/calculator.php)

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/)

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 2023, 99% of first-time freshmen and 92% of all students received financial aid (https://www.slu.edu/financial-aid/) and students received more than $459 million in aid University-wide.

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

For information on other scholarships and financial aid, visit www.slu.edu/financial-aid (https://www.slu.edu/financial-aid/).

Learning Outcomes

1. Graduates will be able to demonstrate a foundational understanding of organic, inorganic, analytical and physical chemistry.
2. Graduates will be able to demonstrate proficiency in basic (general, organic, and analytical) laboratory techniques and conduct laboratory experiments safely.
3. Graduates will be able to collect, interpret and analyze quantitative data.
4. Graduates will be able to communicate scientific results effectively.

Requirements

Chemistry students must complete a minimum total of 48 credits for the B.A. major.

Code	Title	Credits
University Undergraduate Core (https://catalog.slu.edu/academic-policies/academic-policies-procedures/university-core/)		**32-35**
Major Requirements		
Chemistry Core		
CHEM 1130 & CHEM 1115	General Chemistry 1 for Majors and General Chemistry 1 Laboratory	4
CHEM 1140 & CHEM 1125	General Chemistry 2 for Majors and General Chemistry 2 Laboratory	4
CHEM 2200 & CHEM 2205	Analytical Chemistry 1 and Analytical Chemistry 1 Laboratory	4
CHEM 2430 & CHEM 2435	Organic Chemistry 1 for Majors and Organic Chemistry 1 Lab for Majors	4
CHEM 2440 & CHEM 2445	Organic Chemistry 2 for Majors and Organic Chemistry 2 Laboratory for Majors	4
CHEM 4500	Inorganic Chemistry	3
CHEM 3330	Physical Chemistry 1	3
CHEM 3340	Physical Chemistry 2	3
MATH 1510	Calculus I	4
MATH 1520	Calculus II	4
PHYS 1610 & PHYS 1620	University Physics I and University Physics I Laboratory [1]	4
PHYS 1630 & PHYS 1640	University Physics II and University Physics II Laboratory [1]	4
CHEM 3000 or higher Elective		3
Required Electives [2]		*6*
Select 6 credits of electives from the approved list [2]		
General Electives		**31-34**
Total Credits		**120**

[1] Engineering Physics I and II with lab are recommended for majors unless they are pre-medical. Physics I and II with lab (PHYS 1310 Physics I (3 cr), PHYS 1320 Physics I Laboratory (1 cr), PHYS 1330 Physics II (3 cr), and PHYS 1340 Physics II Laboratory (1 cr) also fulfill the physics requirement and are recommended for pre-medical students.

[2] Any additional CHEM 3000 or higher level course, MATH 2530 Calculus III (4 cr), STAT 1300 Elementary Statistics with Computers (3 cr) or STAT 3850 Foundation of Statistics (3 cr), PHIL 4150 Philosophy of Science (3 cr) or PHIL 4160 Philosophy and Physics (3 cr), ECE 2101 Electrical Circuits I (3 cr), CSCI 1020 Introduction to Computer Science: Bioinformatics (3 cr) or CSCI 1060 Introduction to Computer Science: Scientific Programming (3 cr), PHYS 2610 Modern Physics (3 cr), PHYS 3310 Optics (3 cr) or PHYS 4010 Nanoscience Frontiers (3 cr), CVNG 4250 Water Treatment Processes (3 cr), EAS 2480 Foundations of Environmental Science (3 cr), FRSC 2600 Survey of Forensic Science (3 cr), FRSC 3620 Chemical Forensics (2 cr), FRSC 3621 Chemical Forensics Laboratory (1 cr), FRSC 3630 Forensic Biology (2 cr) or FRSC 3631 Forensic Biology Laboratory (1 cr), FRSC 3640 Fingerprints (3 cr), CSO 1600 Cannabis Extraction & Product Production (3 cr) or CSO 2000 Pharmacological Properties of Cannabis (3 cr), PPY 1450 Drugs We Use and Abuse (3 cr) or PPY 4410 Molecular Pharmacology (3 cr), or any other course or micro-credential that prepares a student for their future science- or health-related career, approved by the Undergraduate Program Coordinator

Non-Course Requirements

All undergraduate majors must complete an exit interview with the department chair during their final semester.

Continuation Standards

The following standards apply to all new freshmen and transfer students:

- Students must earn "C-" or better in General Chemistry I (CHEM 1110 General Chemistry 1 (3 cr)/CHEM 1130 General Chemistry 1 for Majors (3 cr)) and a "C-" or better in CHEM 1120 General Chemistry 2 (3 cr), CHEM 1140 General Chemistry 2 for Majors (3 cr), or the equivalent in transfer.
- Students must earn a "C-" or better in CHEM 2200 Analytical Chemistry 1 (2 cr).

Students who do not earn a "C-" in any of the identified courses must retake the course at SLU in the following semester. If a "C-" is not earned on the second attempt the student will be dismissed from the major. A student who withdraws from one of these courses on the first attempt thus has one more attempt to earn a "C-."

Students must maintain a 2.0 GPA in their major (CHEM) and required related courses (BIOL, PHYS, MATH, etc.). If a student falls below a 2.0 major GPA the student must meet with the undergraduate program director to review their academic performance. If the student cannot raise the major GPA to 2.0 in two semesters, the student will be dismissed from the major.

Roadmap

Roadmaps are recommended semester-by-semester plans of study for programs and assume full-time enrollment unless otherwise noted.

Courses and milestones designated as critical (marked with !) must be completed in the semester listed to ensure a timely graduation. Transfer credit may change the roadmap.

This roadmap should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor/mentor each semester. Requirements, course availability and sequencing are subject to change.

Course	Title	Credits
Year One		
Fall		
CHEM 1130	General Chemistry 1 for Majors	3
CHEM 1115	General Chemistry 1 Laboratory	1
MATH 1510	Calculus I	4
University Core		7
	Credits	**15**
Spring		
CHEM 1140	General Chemistry 2 for Majors	3
CHEM 1125	General Chemistry 2 Laboratory	1
MATH 1520	Calculus II	4
University Core		6
General Elective		3
	Credits	**17**
Year Two		
Fall		
CHEM 2430	Organic Chemistry 1 for Majors	3
CHEM 2435	Organic Chemistry 1 Lab for Majors	1
PHYS 1610	University Physics I (See program notes below)	3
PHYS 1620	University Physics I Laboratory (See program notes below)	1
University Core		6
	Credits	**14**
Spring		
CHEM 2200	Analytical Chemistry 1	2
CHEM 2205	Analytical Chemistry 1 Laboratory	2
CHEM 2440	Organic Chemistry 2 for Majors	3
CHEM 2445	Organic Chemistry 2 Laboratory for Majors	1
PHYS 1630	University Physics II (See program notes below)	3
PHYS 1640	University Physics II Laboratory (See program notes below)	1
University Core		3
	Credits	**15**
Year Three		
Fall		
CHEM 3330	Physical Chemistry 1	3
University Core		6
General Electives		6
	Credits	**15**
Spring		
CHEM 3340	Physical Chemistry 2	3
University Core		6
General Electives		6
	Credits	**15**
Year Four		
Fall		
CHEM 4500	Inorganic Chemistry	3
Required elective (see program notes below)		3
University Core		1
General Electives		9
	Credits	**16**
Spring		
Completion of Exit Interview		
CHEM 3xxx+	Elective	3
Required elective (see program notes below)		3
General Electives		7
	Credits	**13**
	Total Credits	**120**

Program Notes

PHYS 1610 University Physics I (3 cr)-PHYS 1640 University Physics II Laboratory (1 cr) is recommended. However, PHYS 1310 College Physics I (3 cr)-PHYS 1340 College Physics II Laboratory (1 cr) also fulfills the physics requirement.

The required electives can be satisfied by any additional CHEM 3000 or higher level course, MATH 2530 Calculus III (4 cr), STAT 1300 Elementary Statistics with Computers (3 cr), STAT 3850 Foundation of Statistics (3 cr), PHIL 4150 Philosophy of Science (3 cr), PHIL 4160 Philosophy and Physics (3 cr), ECE 2101 Electrical Circuits I (3 cr), CSCI 1020 Introduction to Computer Science: Bioinformatics (3 cr), PHYS 2610 Modern Physics (3 cr), PHYS 3310 Optics (3 cr), PHYS 4010 Nanoscience Frontiers (0,3 cr), CVNG 4250 Water Treatment Processes (3 cr), EAS 2480 Foundations of Environmental Science (3 cr), FRSC 2600 Survey of Forensic Science (3 cr), FRSC 3620 Forensic Chemistry (2 cr), FRSC 3621 Forensic Chemistry Laboratory (1 cr), FRSC 3630 Forensic Biology (2 cr), FRSC 3631 Forensic Biology Laboratory (1 cr), FRSC 3640 Fingerprints (3 cr), CSO 1600 Cannabis Extraction & Product Production (3 cr), CSO 2000 Pharmacological Properties of Cannabis (3 cr), PPY 1450 Drugs We Use and Abuse (3 cr), PPY 4410 Molecular Pharmacology (3 cr), or ay other course or microcredential that prepares a student for their

future science- or health-related career, approved by the undergraduate program coordinator.

2+SLU

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

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