

CHEMISTRY, M.S.

Saint Louis University's Department of Chemistry (<https://www.slu.edu/science-and-engineering/academics/chemistry/>) offers master's students close mentoring relationships, small research groups and opportunities to participate in interdisciplinary research.

Program Highlights

- SLU's Master of Science in Chemistry offers a research-based degree with specialization in analytical, inorganic, organic, physical or biological chemistry, with cross-disciplinary activity encouraged.
- Graduate students in chemistry at SLU have access to a number of research tools, including:
 - Bruker 400 and 700 MHz NMR spectrometers
 - Bruker-EMX EPR, UV-Vis and FTIR spectrometers
 - Research-grade spectrofluorometers
 - GC-MS and LC-MS
 - Electrochemical analyzers
 - Gas chromatographs
 - A scanning electron micrograph
 - Computational facilities with modern molecular software
 - A Bruker CCD X-ray diffractometer facility
- In addition to the M.S. in chemistry, SLU's Department of Chemistry (<https://www.slu.edu/science-and-engineering/academics/chemistry/>) also offers a nonthesis, coursework-based M (<https://catalog.slu.edu/colleges-schools/science-engineering/chemistry/chemistry-ma/>). S in chemical sciences (<https://catalog.slu.edu/colleges-schools/science-engineering/chemistry/chemical-sciences-ms/>).

Curriculum Overview

The requirements for the thesis-based M.S. degree include:

- A minimum of 24 credits of post-baccalaureate coursework (exclusive of thesis research)
- Six credits of thesis research (CHEM 5990 Thesis Research)
- A thesis
- A public oral presentation and a private oral examination

Students who hold a bachelor's degree and are interested in completing the doctoral program in chemistry can petition to transition into SLU's chemistry Ph.D. program (<https://catalog.slu.edu/colleges-schools/science-engineering/chemistry/chemistry-phd/>).

Graduate Handbook (<https://www.slu.edu/science-and-engineering/academics/chemistry/student-resources/graduate-resources.php>)

Research Opportunities

SLU's chemistry graduate students are active in the research areas of analytical, physical, synthetic, materials, environmental and biological chemistry. Research groups regularly publish in top-ranked journals and present at national and international conferences.

Careers

Possible careers for chemistry graduates include pharmaceutical scientist, crime lab analyst, environmental chemist, fuels and materials scientist and academic researcher.

Admission Requirements

Applicants should possess sufficient GPA and TOEFL (if applicable) scores and a bachelor's degree from an accredited college or university. Bachelor's degrees usually are in chemistry or biochemistry, although other science majors will be considered.

Admission typically requires a minimum of 18 semester credits (minimum 2.8 GPA) of upper-division undergraduate chemistry courses, including organic chemistry (two semesters), quantitative analysis (one semester) and physical chemistry (two semesters). Students who do not meet these criteria may complete these prerequisites as part of their graduate program, though not for graduate credit.

Students who have not completed equivalent coursework in upper-level undergraduate inorganic chemistry and instrumental analysis will also be required to complete these courses, but they can be taken for departmental graduate credit.

Application Requirements

- Application form
- Two letters of recommendation (three preferred)
- Résumé
- Goal statement
- Interview (desired)

Requirements for International Students

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/graduate/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.

Application Deadlines

Applications will be reviewed on a rolling basis with priority review given to applications received by Dec. 15 for the fall semester and by Sept. 1 for the spring semester.

Review Process

The Chemistry Graduate Committee votes on whether to admit, deny or waitlist applicants. Applicants on the waitlist may be offered admission in a future semester.

Tuition

Tuition	Cost Per Credit
Graduate Tuition	\$1,450

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, Assistantships and Financial Aid

For priority consideration for a graduate assistantship, apply by the program admission deadlines listed. Fellowships and assistantships provide a stipend and may include health insurance and a tuition scholarship for the duration of the award.

Explore Scholarships and Financial Aid Options (<https://www.slu.edu/financial-aid/types-of-aid/>)

Learning Outcomes

Graduates will be able to:

- Demonstrate expanded knowledge in chemistry.** Exhibit understanding in the core areas of chemistry, with particular strength in the student's chosen area of research.
- Demonstrate information literacy.** Locate and integrate scientific literature to inform research questions and methodology.
- Conduct independent, original research.** Execute and interpret advanced chemical research, culminating in a thesis that contributes new knowledge to the field.
- Communicate scientific findings effectively.** Present research findings clearly and effectively in both written and oral formats to diverse audiences, including scientific peers and broader communities.
- Apply ethical and professional standards.** Practice responsible conduct of research and uphold the highest standards of ethics and professionalism in all aspects of scientific work.

Requirements

Grades of C and below are not considered passing and require repeating or replacement with another grad level course, achieving a grade of B- or better.

Code	Title	Credits
Graduate Chemistry Courses		12
Select four Graduate Chemistry Courses (p. 2)		
Required Research Courses		9
CHEM 5000	Introduction to Chemical Research	
CHEM 5970	Research Topics	
CHEM 5990	Thesis Research	
Research Elective Courses		3
Select one of the following:		
CHEM 5299	Introduction to Analytical Research	
CHEM 5399	Introduction to Physical Research	
CHEM 5499	Introduction to Organic Research	
CHEM 5599	Introduction to Inorganic Research	
Chemistry Elective Courses		6

Select two Graduate Chemistry courses below OR electives can also be fulfilled by taking 5000-level courses in other disciplines such as biology, math, computer science, engineering, and pharmacology with approval by Graduate Program Coordinator and student's committee.

Total Credits **30**

Graduate Chemistry Courses

Code	Title	Credits
CHEM 5200	Analytical Chemistry II	3
CHEM 5230	Mass Spectrometry	3
CHEM 5260	Analytical Separations	3
CHEM 5270	Electroanalytical Chemistry	3
CHEM 5300	Mathematical Techniques in Chemistry	3
CHEM 5370	Computational Chemistry	3
CHEM 5390	Special Topics: Physical Chemistry	3
CHEM 5400	Organic Spectroscopy	3
CHEM 5410	Organic Chemistry 3	3
CHEM 5440	Bioorganic Chemistry	3
CHEM 5450	Advanced Organic Chemistry	3
CHEM 5460	Synthetic Organic Chemistry	3
CHEM 5470	Medicinal Chemistry	3
CHEM 5500	Inorganic Chemistry	3
CHEM 5550	Organometallic Chemistry	3
CHEM 5560	Solid State Chemistry	3
CHEM 5570	Group Theory & Spectroscopy	3
CHEM 5610	Biochemistry 1	3
CHEM 5615	Biochemistry 2	3
CHEM 5620	Biophysical Chemistry	3
CHEM 5630	Introduction to Chemical Biology and Biotechnology	3
CHEM 5800	Fundamentals and Design of Nanomaterials	3
CHEM 5930	Special Topics	3

Non-Course Requirements

A public oral presentation and a private oral examination.

Continuation Standards

Students must maintain a cumulative grade point average (GPA) of 3.00 in all graduate/professional courses. Grades of C and below are not considered passing and require repeating or replacement with another grad level course, achieving a grade of B- or better.

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		
CHEM 5000	Introduction to Chemical Research	1
	Graduate Chemistry course	3
	Graduate Chemistry course	3
Credits		7
Spring		
	Graduate Chemistry course	3
	Graduate Chemistry course	3
Credits		6
Summer		
CHEM 5299	Introduction to Analytical Research	3
or CHEM 5399	or Introduction to Physical Research	
or CHEM 5499	or Introduction to Organic Research	
	or Introduction to Inorganic Research	
or CHEM 5599		
Credits		3
Year Two		
Fall		
	Chemistry elective	3
CHEM 5970	Research Topics	2
CHEM 5990	Thesis Research	3
Credits		8
Spring		
	Chemistry elective	3
CHEM 5990	Thesis Research (See information in Program Notes) *	3
Credits		6
Total Credits		30

* Students are required to complete a minimum of 6 credits of Thesis Research. This requirement is typically completed in the second year. The number of credits can vary each semester, but a student cannot register for zero credits of research until the 6 credits have been completed.

Contact Us

For more information, email the chemistry graduate program coordinator at chemgrad@slu.edu.