

CHEMISTRY, M.A.

Saint Louis University's Master of Arts in Chemistry offers specialization in analytical, inorganic, organic, physical or biological chemistry, with cross-disciplinary activity encouraged. Our D (<https://www.slu.edu/arts-and-sciences/chemistry/>) Department of Chemistry (<https://www.slu.edu/arts-and-sciences/chemistry/>) offers master's students close mentoring relationships, small research groups and opportunities to participate in interdisciplinary research.

Program Highlights

- Many of SLU's graduate courses in chemistry are scheduled in the evening, allowing students to complete the degree part time.
- This flexibility allows students to tailor a program of study to suit their needs. For example, graduate courses in business and management, education, mathematics or other science disciplines may be included.
- Chemistry students at SLU have access to many 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.A. in Chemistry, SLU's Department of Chemistry (<https://www.slu.edu/arts-and-sciences/chemistry/>) also offers M.S. in Chemistry (<https://catalog.slu.edu/colleges-schools/arts-sciences/chemistry/chemistry-ms/>).

Curriculum Overview

The requirements for SLU's non-thesis M.A. degree in chemistry include a minimum of 30 credits of post-baccalaureate coursework and an oral examination.

Students who hold a bachelor's degree and are interested in completing SLU's doctoral program in chemistry (https://catalog.slu.edu/colleges-schools/arts-sciences/chemistry/chemistry-phd/?_ga=2.241708418.1408572268.1585575311-1836301299.1581545667) can transition into the Ph.D. program after the master's requirements are met. A total of 39 credits are required, including 12 credits from dissertation research credits. Students will develop an appropriate coursework track with a mentor that will be approved by the graduate program director or the department chair.

Graduate Handbook (<https://www.slu.edu/arts-and-sciences/chemistry/chemistrymastershandbook2020.pdf>)

Fieldwork and Research Opportunities

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 normally 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 and fee
- Three letters of recommendation
- 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
- 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

Students who want to be considered for the summer and fall semesters must submit applications by Jan. 15. Students who want to be considered for the spring semester should apply by Oct. 1.

Review Process

A three-person committee votes on whether to accept applicants.

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.

For more information, visit <https://www.slu.edu/financial-aid> (<https://www.slu.edu/financial-aid/>).

Learning Outcomes

1. Graduates will be able to demonstrate advanced level knowledge in both a) synthesis and materials chemistry and b) analytical and physical chemistry methods, with a higher level of knowledge expected in the student's area of focus.
2. Graduates will be able to use standard search tools and retrieval methods to obtain information about a topic, substance, technique or an issue relating to chemistry, and assess relevant studies from the chemical literature.
3. Graduates will be able to communicate scientific findings from literature in writing and oral presentation.
4. Graduates will be able to apply learned chemical practices and theories to proposed problems.
5. Graduates will be able to adhere to accepted ethical and professional standards in chemistry.

Requirements

Code	Title	Credits
Synthesis and Materials Chemistry Courses		
Select two Synthesis and Materials Chemistry Courses (p. 2)		6
Analytical and Physical Methods Courses		
Select two Analytical and Physical Methods courses (p. 2)		6
Required Research Courses		
CHEM 5970	Research Topics	3
Research Elective		
Select one Research Elective course (p. 2)		3
Chemistry Elective Courses		
Chemistry courses listed below for Synthesis and Materials Chemistry Courses or Analytical and Physical Methods Courses. 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.		12
Total Credits		30

Synthesis and Materials Chemistry Courses

Must take two courses.

Code	Title	Credits
CHEM 5160	Advanced Synthetic Chemistry	3
CHEM 5400	Organic Spectroscopy	3
CHEM 5440	Bioorganic Chemistry	3
CHEM 5450	Advanced Organic Chemistry	3
CHEM 5460	Synthetic Organic Chemistry	3
CHEM 5470	Principles of Medicinal Chemistry	3
CHEM 5500	Inorganic Chemistry	3
CHEM 5550	Organometallic Chemistry	3
CHEM 5560	Solid State Chemistry	3
CHEM 5610	Biochemistry 1	3

CHEM 5615	Biochemistry 2	3
CHEM 5800	Fundamentals and Design of Nanomaterials	3

Analytical and Physical Methods Courses

Must take two 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 5450	Advanced Organic Chemistry	3
CHEM 5570	Group Theory & Spectroscopy	3
CHEM 5620	Biophysical Chemistry	3
CHEM 5630	Introduction to Chemical Biology and Biotechnology	3
CHEM 5800	Fundamentals and Design of Nanomaterials	3

Research Elective

Select one.

Code	Title	Credits
Full-time student Research Electives		
CHEM 5299	Introduction to Analytical Research	3
CHEM 5399	Introduction to Physical Research	3
CHEM 5499	Introduction to Organic Research	3
CHEM 5599	Introduction to Inorganic Research	3
Part-time student Research Elective		
CHEM 5980	Graduate Reading Course	3

Non-Course Requirements

A private oral examination.

Continuation Standards

Students must maintain a cumulative grade point average (GPA) of 3.00 in all graduate/professional courses.

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		
	Synthesis & Materials Chemistry course (p. 3)	3

Analytical & Physical Methods course (p. 3)	3
Credits	6
Spring	
Synthesis & Materials Chemistry course (p. 3)	3
Analytical & Physical Methods course (p. 3)	3
Credits	6
Summer	
CHEM 5970 Research Topics	3
Credits	3
Year Two	
Fall	
Chemistry electives (p. 3)	3-6
Credits	3-6
Spring	
Chemistry electives (p. 3)	3-6
Credits	3-6
Summer	
Research Elective (p. 3)	3
Credits	3
Year Three	
Fall	
Chemistry electives (p. 3)	3-0
Credits	3-0
Spring	
Chemistry electives (p. 3)	3-0
Credits	3-0
Total Credits	30

Program Notes

Students in the coursework M.A. program commonly take one to two courses a semester, which means the timeline will vary for each student.

Synthesis and Materials Chemistry Courses

Must take two courses.

Code	Title	Credits
CHEM 5160	Advanced Synthetic Chemistry	3
CHEM 5400	Organic Spectroscopy	3
CHEM 5440	Bioorganic Chemistry	3
CHEM 5450	Advanced Organic Chemistry	3
CHEM 5460	Synthetic Organic Chemistry	3
CHEM 5470	Principles of Medicinal Chemistry	3
CHEM 5500	Inorganic Chemistry	3
CHEM 5550	Organometallic Chemistry	3
CHEM 5560	Solid State Chemistry	3
CHEM 5610	Biochemistry 1	3
CHEM 5615	Biochemistry 2	3
CHEM 5800	Fundamentals and Design of Nanomaterials	3

Analytical and Physical Methods Courses

Must take two 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 5450	Advanced Organic Chemistry	3
CHEM 5570	Group Theory & Spectroscopy	3
CHEM 5620	Biophysical Chemistry	3
CHEM 5630	Introduction to Chemical Biology and Biotechnology	3
CHEM 5800	Fundamentals and Design of Nanomaterials	3

Research Electives

Must take three credits.

Code	Title	Credits
Full-time Student Research Electives		
CHEM 5299	Introduction to Analytical Research	3
CHEM 5399	Introduction to Physical Research	3
CHEM 5499	Introduction to Organic Research	3
CHEM 5599	Introduction to Inorganic Research	3
Part-time Student Research Elective		
CHEM 5980	Graduate Reading Course	3
Total Credits		15

Chemistry Electives

Students must take at least four courses.

Chemistry courses listed above for synthesis and materials chemistry or analytical and physical methods. 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 the graduate program coordinator and the student's committee.

Contact Us

For additional information about our program, please contact:

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