CHEMISTRY, M.A.

Saint Louis University’s Department of Chemistry (https://www.slu.edu/arts-and-sciences/chemistry/) offers a Master of Arts in Chemistry with a specialization in analytical, inorganic, organic, physical or biological chemistry.

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 a full-time, research-based M.S. in Chemistry (https://www.slu.edu/science-and-engineering/academics/graduate-programs/chemistry-ms.php).

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://www.slu.edu/science-and-engineering/academics/chemistry/programs/) 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/science-and-engineering/academics/chemistry/student-resources/graduate-resources.php)

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 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 (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

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.

Tuition

<table>
<thead>
<tr>
<th>Tuition</th>
<th>Cost Per Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduate Tuition</td>
<td>$1,310</td>
</tr>
</tbody>
</table>

Additional charges may apply. Other resources are listed below:


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

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

Graduate Chemistry Courses 12

- Select four Graduate Chemistry Courses (p. 2)

Required Research Courses

CHEM 5970 Research Topics 3

Research Elective 3

- Select one Research Elective course (p. 2)

Chemistry Elective Courses 12

- Select four Graduate Chemistry courses listed below OR Electives can 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

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 5160</td>
<td>Advanced Synthetic Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 5200</td>
<td>Analytical Chemistry II</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 5230</td>
<td>Mass Spectrometry</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 5260</td>
<td>Analytical Separations</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 5270</td>
<td>Electroanalytical Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 5300</td>
<td>Mathematical Techniques in Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 5370</td>
<td>Computational Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 5390</td>
<td>Special Topics: Physical Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 5400</td>
<td>Organic Spectroscopy</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 5440</td>
<td>Bioorganic Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 5450</td>
<td>Advanced Organic Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 5460</td>
<td>Synthetic Organic Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 5470</td>
<td>Principles of Medicinal Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 5500</td>
<td>Inorganic Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 5550</td>
<td>Organometallic Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 5560</td>
<td>Solid State Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 5570</td>
<td>Group Theory &amp; Spectroscopy</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 5610</td>
<td>Biochemistry 1</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 5615</td>
<td>Biochemistry 2</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 5620</td>
<td>Biophysical Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 5630</td>
<td>Introduction to Chemical Biology and Biotechnology</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 5800</td>
<td>Fundamentals and Design of Nanomaterials</td>
<td>3</td>
</tr>
</tbody>
</table>

Research Elective

Select one.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 5299</td>
<td>Introduction to Analytical Research</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 5399</td>
<td>Introduction to Physical Research</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 5499</td>
<td>Introduction to Organic Research</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 5599</td>
<td>Introduction to Inorganic Research</td>
<td>3</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year One</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fall</td>
<td>Chemistry Course</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Chemistry Course</td>
<td>3</td>
</tr>
</tbody>
</table>
### Spring
- Chemistry Course: 3
- Chemistry Course: 3
- **Credits**: 6

### Summer
- CHEM 5970: Research Topics: 3
- **Credits**: 3

### Year Two
**Fall**
- Chemistry electives: 3-6
- **Credits**: 3-6

**Spring**
- Chemistry electives: 3-6
- **Credits**: 3-6

### Summer
- Research Elective: 3
- **Credits**: 3

### Year Three
**Fall**
- Chemistry electives: 3-0
- **Credits**: 3-0

**Spring**
- Chemistry electives: 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.

### Contact Us
For additional information about our program, please contact:

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Chemistry Graduate Program Coordinator
chemgrad@slu.edu