

# CHEMISTRY, PHD

for the degree of Doctor of Philosophy in Chemistry

The Ph.D. program in Chemistry includes six technical specialties (areas): analytical chemistry, chemical biology, inorganic chemistry, materials chemistry, organic chemistry, and physical chemistry. Students typically complete the Ph.D. degree requirements in approximately five years. A total of 96 hours including thesis credit is required. Students are required to give a literature seminar, pass an oral preliminary examination, write and defend an original research proposal, and submit a research-based dissertation (thesis), which is defended at an oral final examination.

## Admission

Graduate College requirements apply. Further, applicants should have a bachelor's degree or its equivalent from an accredited college or university in the U.S. or an approved institution of higher learning abroad, with at least 25 semester hours in chemistry (properly distributed) and a grade point average of 3.0 (A = 4.0), is required to be considered for admission to the graduate programs. Applications from students with less than the usual preparation in chemistry or with grade point averages below 3.0 may be considered on an individual basis.

International students whose native language is not English are required to submit passing scores from the internet-based Test of English as a Foreign Language (TOEFL iBT) or International English Language Testing System (IELTS) to qualify for admission and to be eligible for in person teaching duties, which is required by the department of Chemistry. The following are the minimum passing scores for each test:

- TOEFL (iBT) minimum scores: 103 overall, 24 on the speaking subsection
- IELTS minimum scores: 7 overall, 8 on the speaking subsection, and no less than 6 on any subsection.

Graduate Record Exam (GRE) scores (general or subject) are not required. Please do not submit them.

Students who are currently enrolled in graduate programs at other institutions are advised that they should first complete degree work at their current institution before they will be considered for admission to the chemistry PhD program at the University of Illinois. In addition, we require a statement from the applicant and a letter from the applicant's research adviser or department head detailing the situation. Students might be admitted without a degree from their current institution under exceptional circumstances that will need to be described in detail via a letter from the applicant and a separate statement from the department head of the student's current graduate program.

Contact chemistry graduate admissions for further information.

## Graduate Teaching Experience

Experience in teaching is considered a vital part of the graduate program and is required as part of the academic work of all Ph.D. candidates in this program.

## Financial Aid

Support for graduate students is available through fellowships and assistantships. All candidates are considered for these upon application.

Graduate students making normal progress toward their degrees generally receive a tuition waiver as well as a stipend.

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Doctoral programs are offered in a wide range of specialties, including the traditional areas of analytical, inorganic, organic, and physical chemistry as well as materials chemistry and chemical biology. The formal course requirements involve 12 or more hours of 500-level courses, plus 8 or fewer hours of 400-level courses, for a total of 20 hours in chemistry and allied relevant fields. Besides completing formal coursework, students will present a literature seminar, have a formal review of progress following the completion of coursework, pass an oral preliminary examination on research preparation, present and defend an original research proposal not related to their thesis research, and submit a thesis on original research, which is defended at a final oral examination.

For additional details and requirements refer to the department's Graduate Programs (<https://chemistry.illinois.edu/academics/graduate-studies/>) and the Graduate College Handbook (<http://www.grad.illinois.edu/gradhandbook/>).

## Entering with M.S./M.A. degree

Code	Title	Hours
400- 500-level courses in Chemistry or allied fields (max 8 at 400-level)		20
Seminar (CHEM 5X5)		1
CHEM 599	Thesis Research (0 min applied toward degree)	0
<b>Total Hours</b>		<b>64</b>

## Other Requirements

Requirement	Description
Other requirements may overlap	
Teaching experience	1 year
Qualifying Exam Required	No
Preliminary Exam Required	Yes
Original Research Proposal	Yes
Final Exam/Dissertation Defense Required	Yes
Dissertation Deposit Required	Yes
Minimum GPA:	3.0

## Entering with approved B.S./B.A. degree

Code	Title	Hours
400- or 500-level courses in the Chemistry or allied fields (max 8 at 400-level)		20
Seminar		1
CHEM 599	Thesis Research (0 min applied toward degree)	0
<b>Total Hours</b>		<b>96</b>

## Other Requirements

Requirement	Description
Other requirements may overlap	
Teaching experience	1 year

Qualifying Exam Required	No
Preliminary Exam Required	Yes
Original Research Proposal	Yes
Final Exam/Dissertation Defense Required	Yes
Dissertation Deposit Required	Yes
Minimum GPA:	3.0

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NOTE: Some of the learning outcomes below were taken or adapted from the 2013 American Chemical Society Presidential Commission on Graduate Education in the Chemical Sciences. The Department of Chemistry uses these as its main guidelines.

1. To have a deep working knowledge of the principles, techniques, and concepts of contemporary chemistry.
2. To be able to effectively design and carry out independent research leading to new knowledge or a practical, applicable result.
3. To be able to communicate clearly and effectively within and across disciplinary lines.
4. To be able to educate students interested in chemical sciences.
5. To be aware of and prepare for various career opportunities with an advanced degree in chemistry.
6. To clearly understand the ethical conduct of research.
7. To understand and adopt the best safety practices in chemical research.

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## Graduate Degree Programs in Chemistry

### Majors

- Chemistry, MS (<http://catalog.illinois.edu/graduate/las/chemistry-ms/>)
- Chemistry, PhD (p. 1)
  - optional concentration
    - Computational Science & Engineering (<http://catalog.illinois.edu/graduate/engineering/concentration/computational-science-engineering/>)
- Teaching of Chemistry, MS (<http://catalog.illinois.edu/graduate/las/teaching-chemistry-ms/>)

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## Chemistry Department

Department Head: Catherine J. Murphy

Chemistry Department website (<https://chemistry.illinois.edu/>)

Department Faculty (<https://chemistry.illinois.edu/directory/faculty-by-type/>)

109 Noyes Laboratory, 505 South Mathews Avenue, Urbana, IL

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(217) 333-0711

[chemadm@scs.uiuc.edu](mailto:chemadm@scs.uiuc.edu)

## College of Liberal Arts & Sciences

College of Liberal Arts & Sciences website (<https://las.illinois.edu/>)

### Admissions

Department Admissions (<https://chemistry.illinois.edu/admissions/chemistry-graduate-admissions/>)

Graduate College Admissions & Requirements (<https://grad.illinois.edu/admissions/apply/>)