***Twin Cities Campus***

# Chemistry Ph.D.

*Chemistry*

**College of Science and Engineering**

Link to a list of faculty for this program.

**Contact Information:**
Assistant to the Director of Graduate Studies, Department of Chemistry, University of Minnesota, 137 Smith Hall, 207 Pleasant St SE, Minneapolis, MN 55455 (612-626-7444 or 1-800-777-2431; fax: 612-626-7541)
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Website: http://www.chem.umn.edu

- Program Type: Doctorate
- Requirements for this program are current for Fall 2020
- Length of program in credits: 48
- This program does not require summer semesters for timely completion.
- Degree: Doctor of Philosophy

Along with the program-specific requirements listed below, please read the General Information section of the catalog website for requirements that apply to all major fields.

While modern research in chemistry is very interdisciplinary, graduate work in the Department of Chemistry falls broadly into the focus areas of analytical chemistry, chemical biology, environmental chemistry, inorganic chemistry, materials chemistry, organic chemistry, polymer chemistry, experimental physical chemistry, and computational chemistry.

## Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

## Prerequisites for Admission

An undergraduate degree in chemistry or a related field is required for admission. The preferred minimum undergraduate GPA for admittance to the program is 3.20.

Other requirements to be completed before admission:
Applicants must offer the substantial equivalent of the courses in analytical, inorganic, organic, and physical chemistry that are required of undergraduate majors in the University of Minnesota chemistry curriculum. They must also have at least one year of college physics, plus college mathematics through calculus.

Three letters of recommendation and scores from the GRE general test are required for all applications. International applicants are expected to provide scores of at least 587 (paper), 240 (computer), or 95 (Internet) on the TOEFL, as well as GRE scores.

A Subject GRE score is not required but if available will help the admission committee to make better decisions, in particular in cases where undergraduate transcripts are more difficult to evaluate (which is especially true for international applicants, who are strongly encouraged to submit the GRE subject score). The subject GRE can be taken in chemistry or a related discipline.

**Special Application Requirements:**
Applications for fall semester must be completed by December 15 in order to be considered for fellowship support and teaching and research assistantships. Applications received after December 15 will be reviewed on a space available basis. The department prefers to admit for fall semester and will only consider spring admission under extenuating circumstances. More information is available at chem.umn.edu/academics/graduate/prospective-students

Applicants must submit their test score(s) from the following:

- GRE

International applicants must submit score(s) from one of the following tests:

- TOEFL
  - Internet Based - Total Score: 95
  - Internet Based - Speaking Score: 23
- IELTS
  - Total Score: 7

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- MELAB
  - Final score: 83

Key to test abbreviations(GRE, TOEFL, IELTS, MELAB).

For an online application or for more information about graduate education admissions, see the General Information section of the catalog website.

## Program Requirements

24 credits are required in the major.
24 thesis credits are required.

This program may be completed with a minor.

Use of 4xxx courses toward program requirements is permitted under certain conditions with adviser approval.

A minimum GPA of 3.00 is required for students to remain in good standing.

Students in the PhD program are expected to pass four of five proficiency examinations during their first year in residence. The exams, which are at the level of an advanced undergraduate course, are in analytical chemistry, biochemistry, inorganic chemistry, organic chemistry, and physical chemistry. The exams are given during the chemistry first-year orientation program in August. In the event that a student does not pass the first exam, the exams are offered two more times during the academic year.

A minimum GPA of 3.00, 18 credits of coursework with a grade of B- or better, and passing grades on all four proficiency exams are required for students to remain in good standing.

All first-year students must register for CHEM 8601 during both fall and spring semesters and for CHEM 8066 during the spring semester of their first year in residence.

All CHEM courses must be taken at the 5xxx or 8xxx level. Up to 8 credits in 4xxx-level courses from another department may be used with approval from the director of graduate studies.

**Required Courses**

Any 8xxx-level CHEM course can be used to satisfy degree requirements. CHEM 5210 and 5755 will be accepted or consult with advisor for other 5xxx-level course options.
Students may count one credit each of the following towards the degree.
CHEM 8066 - Professional Conduct of Chemical Research (1.0 cr)
CHEM 8601 - Seminar: Modern Problems in Chemistry (1.0 cr)

**Thesis Credits**

Take 24 credits after passing preliminary oral exam.
CHEM 8888 - Thesis Credit: Doctoral (1.0 - 24.0 cr)

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