

# PhD in Chemistry

## Admission

To enroll in the graduate program in chemistry, students must follow the admission procedures required by the Graduate School. The chemistry and biochemistry department requires:

- Baccalaureate degree in chemistry with the following minimum subject requirements: one year general chemistry; one year organic, analytical, inorganic and physical chemistry; one semester biochemistry; one year physics and one year calculus;
- Grade point average of at least 3.000/4.000 (both overall and in chemistry);
- Two letters of recommendation from individuals familiar with the applicant's academic background;
- A one-page typed statement of goals and research interests; and
- Submission of test scores from the general GRE exam is not required, but is preferred. The department reserves the right to ask a candidate for submission of GRE scores if necessary to afford an affirmative review of the applicant. The department strongly recommends test scores from the chemistry subject GRE as well.
- International students must have a minimum TOEFL score of 550 paper-based, or 79 internet-based, or an overall band score of 6.5 on the IELTS, or a score of 58 on the PTE-Academic.

Applicants whose transcripts do not explicitly list the chemistry courses which they have taken must submit an official description of the courses which comprise their chemistry degree. Students deficient in any of the requirements may be admitted conditionally provided they follow the specified procedures required to remove any deficiencies.

Applications are reviewed as completed throughout the year; however, all application materials required by the chemistry and biochemistry department must be submitted by April 1st for consideration for the following fall semester, and September 1st for consideration for the following spring semester.

## Assessment Exam Requirements for the PhD Degree

All entering Doctor of Philosophy students are required to take assessment exams in analytical, inorganic, organic, physical chemistry and biochemistry at the beginning of their first semester in the program. Students must receive a pass or remove deficiencies in four of the subject areas listed above within the first year in the program. Deficiencies may be removed by enrolling in an appropriate course designated by the graduate affairs committee and passing with a *B* or better grade. Assessment exams are given two times a year — fall and spring.

## Program Requirements

All PhD students are required to satisfactorily complete the Professional and Scholarly Integrity Training by the end of their first year in the program.

All PhD students are required to take 24 credit hours of graduate chemistry courses comprising core courses and focused courses.

Course	Title	Hours
<b>Core Courses</b>		
CHEM 715	Advanced Spectroscopy	3
CHEM 719	Modern Synthetic Methods	3
CHEM 721	Advanced Biochemistry	3
CHEM 722	Advanced Physical Chemistry	3

CHEM 734	Instrumental Methods for Research	3
<b>Focus Courses</b>		
Select two to three focused courses numbered above 701 and/or the following:		9
CHEM 717	Advanced Spectroscopy II	
Complete two enrollments in the following:		2
CHEM 700	Chemistry Seminar	
Enroll in the following each semester of the degree program:		4
CHEM 701	Chemistry Colloquium	
Select additional courses in consultation with major advisor and the department's graduate affairs committee		42
<b>Total Credit Hours</b>		<b>72</b>

Students must pass five cumulative examinations out of 12 attempts to remain in the program. During their fifth semester, students must develop and orally defend an original research proposal. After passing the cumulative exams and successfully defending the original research proposal, the student will have qualified as a candidate for the PhD in chemistry and must be enrolled in at least 2 credit hours of Research in Chemistry (CHEM 990) each semester for the duration of the program. The final requirement for the degree is the defense of a dissertation based on original research. Well-prepared entering students should be able to complete the requirements within four years.

## Dissertation

The dissertation is reviewed by a committee from the department, and an oral examination given by a faculty committee appointed by the Graduate School must be passed. Students must select a faculty member to be their research advisor by the beginning of their second semester in the graduate program.

Students in the PhD program in good standing, who have completed all required courses, have satisfactorily presented their departmental research seminar, have defended their creative research proposal, and have satisfied all other requirements for admittance to candidacy for the PhD degree, will upon request and approval by the student's committee be awarded the MS degree.

## Applied Learning

Students in the PhD program in chemistry are required to complete an applied learning or research experience to graduate from this program. This requirement can be met by successfully completing the dissertation. For students being awarded a Masters along the way to the PhD, this requirement does not require a thesis, but can be met by completion and defense of an independent proposal that is modeled after an NIH research proposal.