

CHEMISTRY PH.D. - PHYSICAL CHEMISTRY

General Graduate Program Requirements

Graduate School policies and standards can be found on the Graduate School Policies page (<https://catalog.umn.edu/graduate/school-policies/>).

The minimum GPA for any graduate program is 3.0. Individual programs may require more than a 3.0 to remain in good standing.

The minimum grade for a course to be accepted toward any master's or doctoral requirement is C. The minimum grade for a course to be accepted toward a certificate program is B-. Individual programs may require higher grades for specific courses.

Doctor of Philosophy - Chemistry; Physical Chemistry Concentration

- The coursework that a graduate student takes is dependent upon their research area, the degree they are pursuing, and the need to cover deficiencies as determined by the proficiency exams.
- 18 credits must be lecture-based courses, which is six courses worth 3 credits each at the 500 level; some graduate credit approved 400-level courses can be used upon recommendation of the advisory committee.
- All graduate students will register for CHMY 630 (Departmental Seminar) every semester. Attending departmental research seminars is integral to a student's education and allows the student a chance to learn about areas of science outside of their research area. Attendance of these seminars is mandatory unless excused by the faculty member responsible for organizing the seminar. The method of grading this class is the choice of the faculty member organizing the seminar.
- Students must complete 18 credits in letter-graded courses. The specific courses completed must be selected in consultation with the thesis advisor and advisory committee.
- 9 of the 18 credits must be in 500-level letter-graded Chemistry (CHMY) courses
 - 6 of these 9 Chemistry credits must be in 500-level letter-grade Chemistry courses outside the student's research specialty area as determined by the advisory committee.
- The remaining 9 of the 18 credits may be in traditional letter-graded courses within or outside the Department of Chemistry and Biochemistry when approved by the student's committee.
- Students should plan a course of study that will allow them to complete coursework in their first four semesters of residence. Students will typically complete two graduate courses in each of their first two semesters in residence and at least one graduate course in each of the following two semesters.

Course Requirements

Code	Title	Hours
Core Requirements		
Complete all of the following courses:		
CHMY 501	Teaching University Chemistry (completed the first fall semester)	1

CHMY 630	Seminar	10
CHMY 640	Introductory Graduate Seminar (completed the first fall semester)	1
CHMY 650	Graduate Chemistry Seminar (completed in the first two spring semesters, 1 each semester)	2
CHMY 652	Original Research Proposal ¹	1

Physical Chemistry Requirements

Complete all of the following courses:

CHMY 420	Chemoinformatics	3
CHMY 562	Organic Structure and Mechanisms	3
CHMY 568	Organometallic Chemistry	3

Electives

Complete 9 credits of graduate-level courses chosen in consultation with your advisor. 9

Research/Dissertation

Complete 27 credits of the following courses: 27

CHMY 690	Research	
CHMY 699	Dissertation	

Total Hours 60

¹ Completed fall semester following completion of 2 credits in CHMY 650