

CHEMISTRY - DOCTOR OF PHILOSOPHY

The Ph.D. in chemistry is offered in the major emphasis areas of analytical, inorganic, organic, and physical chemistry and biochemistry. The graduate program is designed to teach students modern approaches to chemistry and biochemistry (courses), experimental methods to problem-solving (research), and communication skills in the discipline (seminars and colloquia). Ph.D. candidates are required to complete the courses below, pass a qualifying exam after the first year, pass both a written and oral comprehensive exam before the fourth year, and prepare a written thesis and pass a final oral examination.

Prefix	Title	Credits
CHEM 475	Central Concepts in Chemistry - Safety	1
CHEM 476	Central Concepts in Chemistry - Research Ethics	1
CHEM 477	Central Concepts in Chemistry - Professional Development	1
CHEM 501	Central Concepts in Chemistry - Energy	3
CHEM 502	Central Concepts in Chemistry - Structure	3
CHEM 503	Central Concepts in Chemistry - Dynamics	3
CHEM 504	Central Concepts in Chemistry - Measurements	3
Graduate student seminars		6-12
CHEM 510	Graduate Student Seminar ¹	
CHEM 520	Comprehensive Literature Review Seminar for Graduate Students ²	
<i>Additional Required Courses</i> ³		6-12
<i>Research Credits</i> ⁴		24-54
Total Credits		51-93

¹ Beginning in the second semester, all Ph.D. students must enroll in 1 credit of CHEM 510 Graduate Student Seminar, attending each semester. At least two credits of CHEM 510 must be taken for a letter grade of B- or better. The remaining CHEM 510 credits may be taken as S/U.

² CHEM 520 Comprehensive Literature Review Seminar for Graduate Students is given on a topic of the student's choice as part of the Comprehensive Exam and will be assigned a letter grade. A grade of C+ or lower will require the student to repeat the course a maximum of once.

³ Additional courses in subsequent years are chosen based on major emphasis area, through consultation with the thesis committee.

⁴ At least 18 credits must be either CHEM 700 Doctoral Dissertation or BCHE 700 Doctoral Dissertation. 700-level research credits are taken after the completion of the comprehensive exam. Remaining credits can be CHEM 600 Research or BCHE 600 Research.