

Chemistry Doctorate

Department Information

- **Program Information:**
ndsu.edu/programs/graduate/chemistry (<http://ndsu.edu/programs/graduate/chemistry/>)
- **Department Web Site:**
ndsu.edu/chemistry/ (<http://ndsu.edu/chemistry/>)
- **Application Deadline:**
Fall semester- April 15; Spring semester- October 31 (If there are no spring openings, spring applications are automatically considered for the subsequent fall semester.)
- **Credential Offered:**
Ph.D.
- **Test Requirement:**
GRE required for applicants who have not earned a degree in the U.S.; GRE (general and subject) recommended for domestic applicants)
- **English Proficiency Requirements:**
RA - TOEFL 71, IELTS 6, Duolingo 105; TA Grader - TOEFL 79, IELTS 6.5, Duolingo 110; TA Instructor - TOEFL 81, IELTS 7, Duolingo 115

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Code	Title	Credits
Required Didactic Courses		
CHEM 720	Introduction to Chemical Research	
MICR 720	Scientific Integrity	
CHEM 725	Advanced Survey of Inorganic Chemistry	
CHEM 732	Advanced Survey of Analytical Chemistry	
CHEM 741	Physical Organic Chemistry I	
CHEM 759	Advanced Survey of Physical Chemistry	
Required Non-Didactic Courses		
CHEM 790	(second year seminar)	
CHEM 790	(proposal seminar)	
CHEM 790	(defense seminar)	
CHEM 899	(Number of research credits determined by student and supervisory committee)	
Additional credits numbered 601 - 689, 691, 700 - 789 and 791 may also count toward the 90 credit total required by the College of Graduate and Interdisciplinary Studies if approved by the student's advisory and examination committee.		
Total Credits		90

- * A student matriculating with a master's degree, including one earned at an international institution, must earn not fewer than 60 graduate credits at NDSU. These credits must include the 19 listed above under Required Didactic Courses. Courses numbered 601-689 may be used for the Plan of Study as long as they have not been taken in an undergraduate or previous graduate program. Approved courses are Department of Chemistry & Biochemistry 625, 626, 627, 628. 630, and 676.

Additionally, the following departmental courses are available for students; Consult with committee for recommendations

Code	Title	Credits
Analytical		
CHEM 632	Analytical Chemistry II	3
CHEM 730	Separations	2
CHEM 736	Mass Spectrometry	2
Biochemistry and Molecular Biology		
BIOC 673	Methods of Biochemical Research	4
BIOC 674	Methods of Recombinant DNA Technology	3

BIOC 701	Comprehensive Biochemistry I	4
BIOC 702	Comprehensive Biochemistry II	4
Inorganic		
CHEM 724	Chemical Applications of Group Theory	1
CHEM 727	Organometallic Chemistry	3
CHEM 728	Physical Methods for Chemical and Biomolecular Research	2
CHEM 744	Organic Spectroscopy	2
Organic		
CHEM 742	Physical Organic Chemistry II	2
CHEM 744	Organic Spectroscopy	2
CHEM 745	Organic Synthesis	4
Physical		
CHEM 665	Survey of Physical Chemistry	4
CHEM 760	Statistical Thermodynamics	4
CHEM 763	Kinetics	2
CHEM 764	Dynamics	2
CHEM 676	Introduction to Computational Quantum Chemistry	3

Admission and Application Requirements

- Graduate School admission and application requirements are found on the Admission Information (<https://catalog.ndsu.edu/past-bulletin-archive/2025-2026/graduate/admission-information/>) page.