

CHEMISTRY (PHD)

Department Website (<http://as.nyu.edu/chemistry/>)

NYSED: 08341 **HEGIS:** 1905.00 **CIP:** 40.0501

Program Description

The Doctor of Philosophy is a research degree. It signifies that the recipient is able to conduct independent research and has both a broad basic knowledge of all areas of chemistry and a comprehensive knowledge of one field in particular.

Since graduate students arrive with a variety of backgrounds, some with M.S. degrees from other institutions in the United States and abroad, the program of courses for each student is designed in consultation with the director of graduate studies, taking each student's specific background, experience, and interests into account.

Admissions

All applicants to the Graduate School of Arts and Science (GSAS) are required to submit the general application requirements (<https://gsas.nyu.edu/nyu-as/gsas/admissions/arc.html>), which include:

- Academic Transcripts (<https://gsas.nyu.edu/nyu-as/gsas/admissions/arc/academic-transcripts.html>)
- Test Scores (<https://gsas.nyu.edu/nyu-as/gsas/admissions/arc/test-scores.html>) (if required)
- Applicant Statements (<https://gsas.nyu.edu/nyu-as/gsas/admissions/arc/statements.html>)
- Résumé or Curriculum Vitae
- Letters of Recommendation (<https://gsas.nyu.edu/nyu-as/gsas/admissions/arc/letters-of-recommendation.html>), and
- A non-refundable application fee (<https://gsas.nyu.edu/admissions/arc.html#fee>).

See Chemistry (<https://gsas.nyu.edu/admissions/arc/programs/chemistry.html>) for admission requirements and instructions specific to this program.

Program Requirements

Students must satisfactorily complete at least 72 credits derived from courses and research, at least 32 of which must be taken in residence at New York University. 20 credits must be earned in lecture-based courses maintaining a cumulative GPA of 3.0 or greater. A grade of B- or better in all classes is required to maintain in good standing in the program. Any course taken outside of the Chemistry department will need approval from the Director of Graduate Studies (DGS). All doctoral candidates are required to attend at least twenty colloquia/seminars presented by distinguished visiting scientists, at least ten prior to the qualifying exam and another 10 prior to the thesis defense.

Course	Title	Credits
Major Requirements		
CHEM-GA 2673	Professional Development ¹	0
CHEM-GA 3010	Graduate Seminar ²	2
CHEM-GA 3200	Original Research Proposal ³	1
Electives		

Other Elective Credits	69
Total Credits	72

- ¹ Taken during the first semester in residence.
- ² Taken during the Fall semester of the second year.
- ³ Taken during the Fall semester of the third year.

In their first year students rotate between two labs during the Fall semester. In preparation for choosing Laboratory Rotations, students are required to meet with six faculty members during the first three weeks of the semester and will submit the Research Interest and Rotation Form (<https://as.nyu.edu/content/dam/nyu-as/chemistry/documents/graduate-ref-docs/ResearchInterestandRotationForm.pdf>). They must select a research advisor at the end of the semester by submitting the Dissertation Advisor Selection Form (<https://as.nyu.edu/content/dam/nyu-as/chemistry/documents/graduate-ref-docs/DissertationAdvisorSelectionForm.pdf>). All forms should be submitted to the Graduate Program Administrator.

In their Second year students are required to submit their Core Dissertation Committee Form (<https://as.nyu.edu/content/dam/nyu-as/chemistry/documents/graduate-ref-docs/CoreDissertationCommitteeMemberSelectionForm.pdf>) to Graduate Program Administrator. The Core Committee must include four tenure-track/tenured faculty members from the department, including the student's thesis advisor. While the Graduate School of Arts and Science requires a minimum three-member core committee, the Chemistry department requires a fourth core committee member.

In their fifth year students must choose an additional reader (<https://as.nyu.edu/content/dam/nyu-as/chemistry/documents/graduate-ref-docs/DissertationCommitteeReaderSelectionForm.pdf>) to serve in their final Dissertation Committee. With the permission of the DGS and the student's dissertation advisor, a student can select one expert who is not a member of the Department's tenure-track/tenured faculty to serve as a member of the Core Dissertation Committee.

Additional Program Requirements

PhD Qualifying Exam

This exam consists of both written and oral components.

The written report is submitted to the Exam Committee at least two weeks before the scheduled exam date.

The oral portion of the exam consists of a 30-minute presentation by the student to the Core Dissertation Committee. Faculty may ask questions throughout the presentation, leading to a total session length of up to two hours.

Students must schedule and present their up to date research before their core dissertation committee by the end of their second year in residence. Must complete at least 10 colloquia/seminars before taking exam. After successful completion of the exam, students must turn in the Qualifier Exam Completion Form (<https://as.nyu.edu/content/dam/nyu-as/chemistry/documents/graduate-ref-docs/Qualifier%20Exam%20Form.pdf>) signed by their committee.

Original Research Proposal (ORP) Exam

The ORP exam provides an opportunity for the student to demonstrate proficiency in the design, planning, and communication of an original research problem. Students are asked to propose a series of experiments to a specific problem or system or the application of an existing technique to a specific problem or application. The proposal must be original, meaning that there should be no overlap with the student's dissertation topic and the proposed technique and/or application should not have appeared in the scientific literature. The ORP consists of written and oral components.

The written part of the exam, which must be submitted to the Dissertation Committee members at least two weeks prior to the scheduled exam date, consists of a five-page, single-spaced document following NSF Guidelines (From the NSF Grant Proposal Guide (https://www.nsf.gov/pubs/policydocs/pappguide/nsf15001/gpg_print.pdf))

The oral portion of the exam consists of a 25-30-minute, uninterrupted presentation by the student to the Core Dissertation Committee followed by a question-and-answer session up to 30 additional minutes. The total meeting should last no more than one hour. The oral presentation by the student should summarize the written proposal.

Each student is responsible for scheduling the date and time for the examination with their thesis committee. The examination is required to be completed in January or February of the student's third year in residence. After taking the exam, the student should submit the Original Research Proposal Exam Form to the Graduate Program Administrator.

Work-in-Progress Seminar

Students are required to present a department-wide seminar as part of the Work-in-Progress series during their 4th year. Each student's individual talk will be 20 minutes, followed by 5-10 minutes of questions-and-answers. This requirement can also be accomplished at a departmental retreat, if available.

Abu Dhabi and Shanghai students exempt.

Dissertation Defense Exam

There are two parts to this exam.

The first part of the exam consists of a seminar by the student approximately 45-50 minutes before the student's dissertation committee and evaluation of the student's thesis. The thesis must be provided at least four (4) weeks before the exam. Following the student's presentation, the committee asks the student questions about the presentation and the thesis. The dissertation committee discusses the student's performance and evaluates the thesis in a closed-door session. If any concerns remain, the student might be called back for a closed-door question-and-answer session with the dissertation committee. The exam is judged on a "Pass" or "Fail" basis. Two weeks before the defense the Oral Defense Form (https://gsas.nyu.edu/content/dam/nyu-as/gsas/documents/policies-and-procedures-and-forms/esignature_forms/writeable_doctoral_thesis_oral_defense_form.pdf) must be submitted with all information filled out except the signatures. It must be sent to the Graduate Program Administrator, her or she will work on collecting the signatures via GSAS.

After successful completion of the defense, the student will present a lecture of his or her work, which is open to the public and constitutes the second part of the exam. The student's Dissertation Defense Committee is not required to attend the public lecture. Student's PI/Advisor must fill out the Dissertation Defense Part 2 Submission Form. (<https://docs.google.com/forms/d/>

[e/1FAIpQLSfsuRhx9ynorLJk8mosF5cogmzOtyEkEiqJ22NdMCljYwLQ/viewform/\)](https://gsas.nyu.edu/content/dam/nyu-as/gsas/documents/policies-and-procedures-and-forms/esignature_forms/writeable_doctoral_thesis_oral_defense_form.pdf)

Departmental Approval

All Graduate School of Arts & Science doctoral candidates must be approved for graduation by their department for the degree to be awarded.

Sample Plan of Study

Course	Title	Credits
1st Semester/Term		
CHEM-GA 2673	Professional Development	0
CHEM-GA XXXX	Chemistry Elective	4
CHEM-GA XXXX	Chemistry Elective	4
CHEM-GA XXXX	Chemistry Elective	4
Credits		12
2nd Semester/Term		
CHEM-GA 2931	Research	4
CHEM-GA XXXX	Chemistry Elective	4
CHEM-GA XXXX	Chemistry Elective	4
Credits		12
3rd Semester/Term		
CHEM-GA 3010	Graduate Seminar	2
CHEM-GA 2931	Research	6
CHEM-GA XXXX	Chemistry Elective	4
Credits		12
4th Semester/Term		
CHEM-GA XXXX	Chemistry Elective	4
CHEM-GA XXXX	Chemistry Elective	4
CHEM-GA 2931	Research	4
Credits		12
5th Semester/Term		
CHEM-GA 3200	Original Research Proposal	1
CHEM-GA 2931	Research	11
Credits		12
6th Semester/Term		
CHEM-GA 2931	Research	12
Credits		12
Total Credits		72

Following completion of the required coursework for the PhD, students are expected to maintain active status at New York University by enrolling in a research/writing course or a Maintain Matriculation (MAINT-GA 4747) course. All non-course requirements must be fulfilled prior to degree conferral, although the specific timing of completion may vary from student-to-student.

Learning Outcomes

Upon successful completion of the program, graduates will:

1. Have made a significant and original contribution to the field of chemistry.
2. Have mastered the theories and concepts in their area of specialization.
3. Be able to critically evaluate the scientific literature.
4. Be proficient in oral and written communication and will be able to communicate with their peers and various audiences.
5. Be able to carry out independent research.

6. Be able to think critically and develop strategies to tackle a scientific problem.

Policies

NYU Policies

University-wide policies can be found on the New York University Policy pages (<https://bulletins.nyu.edu/nyu/policies/>).

Graduate School of Arts and Science Policies

Academic Policies for the Graduate School of Arts and Science can be found on the Academic Policies page (<https://bulletins.nyu.edu/graduate/arts-science/academic-policies/>).