# 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.

| Course | Title | Credits |
|---|---|---|
| **Major Requirements** | | |
| CHEM-GA 2673 | Professional Development [1] | 0 |
| CHEM-GA 3010 | Graduate Seminar [2] | 2 |
| **Electives** | | |
| Other Elective Credits | | 70 |
| **Total Credits** | | **72** |

1

Taken during the first semester in residence.

2

Taken during the Fall semester of the second year.

## Additional Program Requirements

### PhD Qualifying Exam

This exam consists of both written and oral components. Students must present their up to date research before their core dissertation committee at the end of their second year in residence.

### Original Research Proposal (ORP) Exam

The original proposal consists of written and oral components. 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.

### Doctoral Thesis

The thesis is evaluated by the core dissertation committee and one additional faculty member who is referred to as reader. All dissertation committee members must approve of the final version of the thesis prior to the public defense.

### Dissertation 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. 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.

### Departmental Approval

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

## Additional Program Information

All doctoral candidates are required to attend at least twenty colloquia presented by distinguished visiting scientists, at least ten prior to the qualifying exam and another 10 prior to the thesis defense. Students gain laboratory research experience in two groups during their first semester in residence. This laboratory experience provides student with direct exposure to techniques and methodology used in the various labs and helps them to choose a thesis adviser.

Students can select a research advisor at the end of the Fall semester in their first year of residency. Students are then required to submit their core dissertation committee (four faculty members) by the beginning of the fall semester of their second year. While the Graduate School of Arts and Science requires a minimum three-member core committee, the department requires a fourth core committee members. Prior to taking the dissertation exam, students must also choose a reader to serve

as the fifth member of the dissertation committee Students are also required to present a seminar discussing their research progress to the department during Year 3 or Year 4.

## 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/).