# CHEMISTRY, PHD

The Graduate Program is designed for students who wish to earn a Ph.D. in Chemistry while undertaking cutting edge research. The program provides students with the necessary theoretical background and handson training to become independent and highly successful scientists. Graduate students achieve mastery of advanced chemistry topics

through courses in different subdisciplines.

Graduate students conduct research in the fields of bioinorganic chemistry, bioorganic chemistry, chemical biology, biophysical chemistry, bioinformatics, materials science, laser chemistry, health related chemistry, structural and dynamical studies of biological systems, X-ray scattering/diffraction, NMR spectroscopy, applications of computing and computer graphics, as well as investigations of chemical communication and hormone-receptor interactions.

For more information: https://www.chem.upenn.edu/content/phd-program (https://www.chem.upenn.edu/content/phd-program/)

# **University PhD Benchmarks**

In addition to Program requirements, the following milestones must be completed:

Code	Title	Course Units
Qualifying E	valuation	
Candidacy E	Examination	
Dissertation	Defense/Oral Exam	
Dissertation	Deposit	

For more information view the University's Academic Rules for PhD Programs (http://catalog.upenn.edu/pennbook/academic-rules-phd/).

### Curriculum

Code	Title	Course
Required Courses		Units
CHEM 6010	Chemical Information	1
or CHEM 6011	Chemical Information for Biological Chemists	
or CHEM 6012	Chemical Information for Inorganic and Material Chemists	S
or CHEM 6013	Chemical Information for Organic Chemists	
or CHEM 6014	Chemical Information for Physical Chemists	
Chemistry Course	s between 4000-9998	6
Electives <sup>1</sup>		13
Teaching Requirem	pent	
Two semesters of	teaching are required	
Total Course Units	3	20

# **University PhD Benchmarks**

In addition to Program requirements, the following milestones must be completed:

Code	Title	Course
		Units
Qualifying Evalu	lation	
Candidacy Exan	nination	
Dissertation Def	fense/Oral Exam	
Dissertation Dep	posit	

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<sup>1</sup> Including lab rotations for Biological and Biophysical students.

The degree and major requirements displayed are intended as a guide for students entering in the Fall of 2025 and later. Students should consult with their academic program regarding final certifications and requirements for graduation.

#### **Sample Plan of Study**

Code	Title	Course Units		
Year 1				
Select 6 course units of required coursework				
Chemical Information Course				
Choose a Research Supervisor				
Year 2				
CHEM 9999	Independent Study and Research			
Form Dissertation Committee				
Candidacy Exam				
Year 3				
CHEM 9999	Independent Study and Research			
Annual Meeting of the Dissertation Committee				
Year 4				
CHEM 9999	Independent Study and Research			
Annual Meeting of the Dissertation Committee				
Years 5 and 6				
Write Dissertation				
Public Defense				

Additional Coursework may be taken throughout.