

COMPUTER AND INFORMATION SCIENCE, PHD

The degree and major requirements displayed are intended as a guide for students entering in the Fall of 2022 and later. Students should consult with their academic program regarding final certifications and requirements for graduation.

The Doctoral Program (Ph.D.) in Computer and Information Science (CIS) welcomes candidates with strong training in any of the disciplines related to modern information processing, with an emphasis on computer science and mathematics. Research and teaching form the essence of our doctoral program. Our curriculum is designed to develop the intellectual skills essential for the rapidly changing character of research and to meet the demands of academe and industry. Students develop their own advanced study focus, working with faculty mentors on topics ranging from the core computer science discipline to diverse scholarly interactions within the School of Engineering and the University.

For more information: <http://www.cis.upenn.edu/prospective-students/graduate/phd.php>

View the University's Academic Rules for PhD Programs (<http://catalog.upenn.edu/pennbook/academic-rules-phd/>).

Required Courses

Code	Title	Course Units
Responsible Conduct of Research Requirement		
EAS 9000	Responsible Conduct for Research in Engineering	
Core Courses		
Select four of the following:		
CIS 5000	Software Foundations	
CIS 5020	Analysis of Algorithms	
CIS 5050	Software Systems	
CIS 5110	Theory of Computation	
CIS 5200	Machine Learning	
CIS 5480	Operating Systems Design and Implementation	
CIS 5500	Database and Information Systems	
CIS 5710	Computer Organization and Design	
Teaching Practicum		
CIS 8950	Teaching Practicum	
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Elective Requirement		
Select four approved 5000-8000 level University courses ¹		
Independent Study		
Select 4 courses		
Research		
Select 2 required courses related to the Dissertation Research area plus 2 in an unrelated area		
Dissertation Status		
CIS 9950	Dissertation	

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Two courses can be waived for students entering with a Master's degree. Advisor and Graduate Chair approval is required for non-CIS courses.