COMPUTER SCIENCE, PHD

for the degree of Doctor of Philosophy in Computer Science

The Department of Computer Science is one of the longest established computer science departments in the world and is consistently ranked as a top-5 graduate program.

Opportunity exists for specializing in computational science and engineering via the Computational Science & Engineering (http://catalog.illinois.edu/graduate/engineering/concentration/computational-science-engineering/) optional graduate concentration.

Department Research

Illinois has been an international leader in computing research for almost five decades. Broadly organized around 11 research areas (http://cs.illinois.edu/research/), more than 120 faculty members (http://cs.illinois.edu/people/faculty/) conduct research with over 625 graduate students. They regularly collaborate with researchers across campus, in other departments or research units.

The home of the Department of Computer Science at Illinois is the Thomas M. Siebel Center for Computer Science (http://cs.illinois.edu/about-us/), a state-of-the-art building that opened its doors in 2004. On the north side of campus, home to The Grainger College of Engineering (https://grainger.illinois.edu/), Siebel Center is an interactive computing habitat, made possible by a gift from alumnus Tom Siebel. The vision for the building was not only to create a magnificent space to work in, but to offer opportunities to investigate and apply computing tools on the building itself. Advanced wireless and wired communication networks, sensors, actuators, video capture and display equipment, video walls and information panels and storage and computing capabilities within the building allow researchers to examine communication and computation issues related to pervasive computing, multimedia infrastructure, building intelligence, security and privacy, and art.

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For additional details and requirements refer to the department's Graduate Degree Requirements (http://cs.illinois.edu/academics/graduate/phd-program/) and the Graduate College Handbook (http://grad.illinois.edu/gradhandbook/).

Doctor of Philosophy in Computer Science
Entering with approved M.S. degree in Computer Science

Code	Title	Hours
CS 599	Thesis Research (minimum applied toward degree)	32
500-level CS course work (minimum applied toward degree)		12
Does not include CS 597 nor CS 591.		
Additional 500-level course work		4
Does not include independent study nor seminar hours.		
Remaining thesis research credit or graduate-level course work (Minimum applied toward degree. 400- or 500-level)		16
Thesis research hours must be CS 599.		
Individual study hours must be CS 597, seminar hours must be CS 491/CS 591.		
Not to exceed 16 hours of CS 597 and 8 hours of CS 491/CS 591 combined towards degree.		
Not to exceed 12 hours of CS 597 per semester.		
Includes CS 591 PHD, taken in the first semester.		
Includes CS 591 TA taken prior to/concurrently with first TAship.		
Total Hours		**64**

Other Requirements and Conditions

Requirement	Description
Other Requirements and Conditions may overlap	
A teaching assistantship for an entire term, with a satisfactory performance evaluation by the department, is required by the end of the 5th year.	
Ph.D. exam and dissertation requirements:	
International Students must show demonstration of English proficiency (equivalent to that necessary to be a TA-see Financial Aid) before taking the Qualifying Exam.	
Qualifying exam	
Preliminary exam	
Final exam or dissertation defense	
Dissertation deposit	
Minimum GPA:	3.0

Entering with other approved graduate degree

Code	Title	Hours
CS 599	Thesis Research (minimum applied toward degree)	32
500-level CS course work	(Minimum applied toward degree.)	12
Does not include CS 597 nor CS 591.		
Additional 500-level course work		4
Does not include independent study nor seminar hours.		
Supplementary CS Graduate-level 400- or 500-level course work (Minimum applied toward degree.)		8
Does not include CS 597 nor CS 491/CS 591.		
Remaining thesis research credit or graduate-level course work (Minimum applied toward degree. 400- or 500-level)		16
Thesis research hours must be CS 599		
Individual study hours must be CS 597, seminar hours must be CS 491/CS 591.		
Not to exceed 16 hours of CS 597 and 8 hours of CS 491/CS 591 combined towards degree.		
Not to exceed 12 hours of CS 597 per semester.		

Includes CS 591 PHD, taken in the first semester.	
Includes CS 591 TA taken prior to/concurrently with first TAship.	
Total Hours	**72**

Other Requirements and Conditions

Requirement	Description
Other Requirements and Conditions may overlap	
A teaching assistantship for an entire term, with a satisfactory performance evaluation by the department, is required by the end of the 5th year.	
Ph.D. exam and dissertation requirements:	
International Students must show demonstration of English proficiency (equivalent to that necessary to be a TA-see Financial Aid) before taking the Qualifying Exam.	
Qualifying exam	
Preliminary exam	
Final exam or dissertation defense	
Dissertation deposit	
Minimum GPA: 3.0	

Entering with B.S. degree

Code	Title	Hours
CS 599	Thesis Research (minimum applied toward degree)	32
500-level CS course work (Minimum applied toward degree)		12
Does not include CS 597 nor CS 591.		
Additional 500-level course work		4
Does not include independent study nor seminar hours.		
Supplementary CS Graduate-level 400- or 500-level course work (Minimum applied toward degree.)		8
Does not include CS 597 nor CS 491/CS 591.		
Additional graduate-level 400- or 500-level course work		24
CS 597 Limited to a total of 16 hours.		
CS 491/CS 591 Limited to 8 hours combined.		
Does not include non-CS individual study nor seminar hours.		
Remaining thesis research credit or graduate-level course work (Minimum applied toward degree. 400- or 500-level)		16
Thesis research hours must be CS 599.		
Individual study hours must be CS 597, seminar hours must be CS 491/CS 591.		
Not to exceed 16 hours of CS 597 and 8 hours of CS 491/CS 591 combined towards degree.		
Not to exceed 12 hours of CS 597 per semester.		
Includes CS 591 PHD, taken in the first semester.		

Includes CS 591 TA taken prior to/concurrently with first TAship.	
Total Hours	**96**

Other Requirements and Conditions

Requirement	Description
Other Requirements and Conditions may overlap	
A teaching assistantship for an entire term, with a satisfactory performance evaluation by the department, is required by the end of the 5th year.	
Ph.D. exam and dissertation requirements:	
International Students must show demonstration of English proficiency (equivalent to that necessary to be a TA-see Financial Aid) before taking the Qualifying Exam.	
Qualifying exam	
Preliminary Exam	
Final exam or dissertation defense	
Dissertation deposit	
Minimum GPA:	3.0

for the degree of Doctor of Philosophy in Computer Science

1. Demonstrate in-depth knowledge of a particular subject area and broad knowledge of other areas in Computer Science.
2. Analyze and be able to articulate the scientific advances and limitations of results described in the research literature.
3. Plan and conduct original research that addresses questions of significance in a particular subject area in Computer Science.
4. Demonstrate the ability to effectively write research proposals and results.
5. Present research effectively through oral presentations inside the department as well as at external venues.
6. Demonstrate an understanding of and ability to follow ethical standards in research, teaching, and professional service.
7. Demonstrate the ability to teach concepts in Computer Science at the university level, including classroom management skills, techniques for effective lecturing, and methods for guiding and assessing students.

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Admission Requirements

Applicants must hold a bachelor's degree equivalent to that granted by the University of Illinois at Urbana-Champaign. The recommended background for students entering a Computer Science graduate degree program is a bachelor's or a master's degree (only if applying to the PhD program) in computer science or computer engineering. The Graduate Record Examination (GRE) (http://www.ets.org/) general aptitude tests

(Verbal, Quantitative, and Analytical) are no longer required. However, in some cases, GRE general scores may provide helpful supporting information.

Applicants to the computer science PhD program must have a minimum grade point average (GPA) of 3.40 (A = 4.00) in their undergraduate studies (international GPAs are systematically converted) to be considered. The department reserves the right to admit applicants with lower GPAs under rare and exceptional circumstances. If an applicant also holds a graduate degree, the minimum GPA for that degree must be 3.00. Full details of the programs offered by Computer Science, admissibility, application procedures, and deadlines can be found at the department's Prospective Graduate Student Information Web site (http://cs.illinois.edu/admissions/graduate/).

All applicants whose native language is not English are required to submit TOEFL (http://www.toefl.org/) or International English Language Testing System (IELTS) (http://www.ielts.org/) scores as evidence of English proficiency. Minimum admission requirements (https://grad.illinois.edu/admissions/instructions/04c/) (including other temporary test options) are set by the Graduate College.

Financial Aid

Fellowships, research assistantships, and teaching assistantships (all of which include tuition and partial fee waivers) are awarded on a competitive basis. Starting in Fall 2020, Grainger Engineering PhD students in their first five years of enrollment who meet the minimum eligibility requirements (https://grainger.illinois.edu/academics/graduate/phd-funding-guarantee/) are guaranteed a funded appointment for fall and spring that includes a full tuition waiver, a partial fee waiver, and a stipend.

All applicants, regardless of US citizenship, whose native language is not English and who wish to be considered for teaching assistantships (one of the most common forms of financial aid for new graduate students in the department) must demonstrate spoken English language proficiency (http://grad.illinois.edu/admissions/taengprof.htm) by achieving a minimum score of 24 on the speaking subsection of the TOEFL iBT or 8 on the speaking subsection of the IELTS. Students who are unable to take the TOEFL iBT or IELTS are required to receive a minimum score of 5 on the OEAI Test (https://linguistics.illinois.edu/testing/oeai/), offered on campus. All new teaching assistants are required to participate in the Graduate Academy for College Teaching (https://citl.illinois.edu/citl-101/teaching-learning/grad-academy-for-college-teaching/) conducted prior to the start of the semester.

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Computer Science

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PhD program website (https://cs.illinois.edu/academics/graduate/phd-program/)
Computer Science faculty (https://cs.illinois.edu/about/people/all-faculty/)
1312 Siebel Center, 201 N Goodwin, Urbana, IL 61801
(217) 333-4428

Computer Science email (academic@cs.illinois.edu)

Grainger College of Engineering

Grainger College of Engineering website (https://grainger.illinois.edu/)

Admissions

Computer Science Admissions & Requirements (https://cs.illinois.edu/admissions/graduate/)
Graduate College Admissions & Requirements (https://grad.illinois.edu/admissions/apply/)