

# 10KS0112PHD: COMPUTER SCIENCE, PHD

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## Completed Workflow

1. U Program Review (dforgacs@illinois.edu; eastuby@illinois.edu; aledward@illinois.edu; mhazen@illinois.edu)

## Approval Path

1. Tue, 21 Jan 2020 22:44:11 GMT  
Deb Forgacs (dforgacs): Approved for U Program Review

## History

1. Jan 21, 2020 by Mary Lowry (lowry)

Date Submitted:Wed, 20 Oct 2021 16:44:29 GMT

## Viewing:10KS0112PHD : Computer Science, PhD

Changes proposed by: Mary Lowry

### Proposal Type:

Major (ex. Special Education)

### This proposal is for a:

Revision

## Administration Details

### Official Program Name

Computer Science, PhD

### Sponsor College

Grainger College of Engineering

### Sponsor Department

Computer Science

### Sponsor Name

Robin Kravets

### Sponsor Email

rhk@illinois.edu

### College Contact

Keri Carter Pipkins

## College Contact Email

kcp@illinois.edu

**List the role for rollbacks (which role will edit the proposal on questions from EPC, e.g., Dept Head or Initiator) and/or any additional stakeholders.***Purpose: List here who will do the editing work if proposal needs rolled back. And any other stakeholders.*

Rollback to Viveka Kudaligama (initiator); Other stakeholders: Mahesh Viswanathan (Assoc. Head for Academics), Elsa Gunter (Director of Undergraduate Programs)

**Does this program have inter-departmental administration?**

No

## Proposal Title

### Effective Catalog Term

Fall 2022

**Provide a brief, concise description (not justification) of your proposal.**

To provide clarity to current requirements by removing graduate handbook footnotes and to add a third requirement category to support cross-disciplinary research and PhD students entering from a non-CS background.

## Program Justification

### Why are these changes necessary?

The current CS PhD catalog has some requirements listed without full specification. Important details are listed under the "Other Requirements" section, leading to confusion for students and complicating the degree audit process. A set of proposed revisions will incorporate specific details in the "Course List" section of Requirements for increased clarity for students, faculty advisors, and professional staff advising CS PhD students.

In addition, recent changes to full-time registration requirements at the Grainger College of Engineering now require students to take an additional credit hour (from 8 to 9 credits with graduate assistantship). Proposed revisions to the PhD program increase the number of (one-credit) seminar hours a student can apply toward degree requirements while facilitating full-time registration.

Finally, shifts in the field of Computer Science have seen an expansion of interdisciplinary research undertaken by scholars and researchers. Historically, students who entered the PhD program with an earned Master's degree held Masters degrees in Computer Science. More recently, more students with graduate degrees in non-CS disciplines, but with sufficient relevant graduate training to be successful in the CS PhD program, are being admitted to the doctoral program. Such students currently do not receive any recognition of their graduate-level training nor earned Master's degrees in other disciplines toward the PhD requirements. They are required to complete the same set of PhD requirements as a PhD student entering with only a Bachelor's degree. The proposed revisions include a third PhD track to recognize graduate degrees earned in non-CS disciplines, subject to review and approval at the department.

CS Department currently reviews all earned MS degrees in CS to assess comparability to a CS Master's degree awarded at Illinois, to determine Stage 1 approval status. This review is completed by the Director, Associate Director, and Assistant Director of Graduate Studies, with additional review by the Research Area Chairs as needed. The department plans to review other approved degrees using a similar process under a set of consistent review guidelines.

## Instructional Resources

**Will there be any reduction in other course offerings, programs or concentrations by your department as a result of this new program/proposed change?**

No

**Does the program include other courses/subjects impacted by the creation/revision of this program?**

No

## Program Regulation and Assessment

**Briefly describe the plan to assess and improve student learning, including the program's learning objectives; when, how, and where these learning objectives will be assessed; what metrics will be used to signify student's achievement of the stated learning objectives; and the process to ensure assessment results are used to improve student learning. (Describe how the program is aligned with or meets licensure, certification, and/or entitlement requirements, if applicable).**

[No changes to current program regulation and assessment practices.]

**Is the career/profession for graduates of this program regulated by the State of Illinois?**

No

## Program of Study

"Baccalaureate degree requires at least 120 semester credit hours or 180 quarter credit hours and at least 40 semester credit hours (60 quarter credit hours) in upper division courses" (source: <https://www.ibhe.org/assets/files/PrivateAdminRules2017.pdf>). For proposals for new bachelor's degrees, if this minimum is not explicitly met by specifically-required 300- and/or 400-level courses, please provide information on how the upper-division hours requirement will be satisfied.

**All proposals must attach the new or revised version of the Academic Catalog program of study entry. Contact your college office if you have questions.**

### Revised programs

PHD Curriculum Revisions\_FA21\_Revised10-20-21.pdf

**Attach a side-by-side comparison with the existing program AND, if the revision references or adds "chose-from" lists of courses students can select from to fulfill requirements, a listing of these courses, including the course rubric, number, title, and number of credit hours.**

Catalog Page Text - Overview Tab

**Text for Overview tab on the Catalog Page. This is not official content, it is used to help build the new catalog page for the program. Can be edited in the catalog by the college or department.**

[No changes are being requested to the current Overview tab on the Catalog Page. A PDF copy of the current Overview tab is uploaded.]

## 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
Additional graduate-level course work or thesis research credit (subject to Other Requirements and Conditions below)		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 TA ship.		
Total Hours		64

#### Other Requirements and Conditions

Requirement	Description
Other Requirements and Conditions may overlap	
Minimum hours of CS course work:	12
CS 597 and CS 591 may not be applied to the 500-level course work requirement.	
CS 591 section PHD must be taken in the first semester. A maximum of 4 credit hours of CS 591 can be applied toward the Ph.D. degree.	
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 <sup>1</sup>	
Preliminary exam <sup>2</sup>	
Final exam or dissertation defense <sup>3</sup>	
Dissertation deposit <sup>4</sup>	
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 TA ship.

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 <sup>1</sup>	
Preliminary exam <sup>2</sup>	
Final exam or dissertation defense <sup>3</sup>	
Dissertation deposit <sup>4</sup>	
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
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 TA ship.		
Total Hours		96

#### Other Requirements and Conditions

Requirement	Description
Other Requirements and Conditions may overlap	
Minimum hours of CS course work:	12
CS 597 and CS 591 may not be applied to the 500-level course work requirement.	

CS 591 section PHD must be taken in the first semester. A maximum of 4 credit hours of CS 591 can be applied toward the Ph.D. degree.

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<sup>1</sup>

Preliminary exam<sup>1</sup>

Preliminary exam<sup>2</sup>

Final exam or dissertation defense<sup>3</sup>

Dissertation deposit<sup>4</sup>

Minimum GPA: 3.0

<sup>1</sup> Qualifying Exam information (<http://cs.illinois.edu/academics/graduate/phd-program/qualifying-exam/>)

<sup>2</sup> Preliminary Exam information (<http://cs.illinois.edu/academics/graduate/phd-program/preliminary-exam/>)

<sup>3</sup> Final exam or dissertation defense information (<http://cs.illinois.edu/academics/graduate/phd-program/final-exam-thesis-defense/>)

<sup>4</sup> Dissertation deposit information (<http://cs.illinois.edu/academics/graduate/phd-program/phd-thesis-format-review-guidelines/>)

### Corresponding Degree

PhD Doctor of Philosophy

## Program Features

### Academic Level

Graduate

### Does this major have transcribed concentrations?

No

### What is the typical time to completion of this program?

7

### What are the minimum Total Credit Hours required for this program?

64, 72, or 96

### What is the required GPA?

3.0

### CIP Code

110701 - Computer Science.

**Is This a Teacher Certification Program?**

No

**Will specialized accreditation be sought for this program?**

No

## **Delivery Method**

**This program is available:**

On Campus - Students are required to be on campus, they may take some online courses.

## **Enrollment**

**Describe how this revision will impact enrollment and degrees awarded.**

The revisions are not expected to impact enrollment, but have potential to reduce time to degree for PhD students whose non-CS graduate degrees are approved by the department.

**Estimated Annual Number of Degrees Awarded**

**What is the matriculation term for this program?**

Fall

## **Budget**

**Are there budgetary implications for this revision?**

No

**Will the program or revision require staffing (faculty, advisors, etc.) beyond what is currently available?**

No

## **Financial Resources**

**Will the unit need to seek campus or other external resources?**

No

**Are you seeking a change in the tuition rate or differential for this program?**

No

Is this program requesting self-supporting status?

No

## Resource Implications

### Facilities

Will the program require new or additional facilities or significant improvements to already existing facilities?

No

### Technology

Will the program need additional technology beyond what is currently available for the unit?

No

### Non-Technical Resources

Will the program require additional supplies, services or equipment (non-technical)?

No

## Resources

For each of these items, be sure to include in the response if the proposed new program or change will result in replacement of another program(s). If so, which program(s), what is the anticipated impact on faculty, students, and instructional resources? Please attach any letters of support/acknowledgement from faculty, students, and/or other impacted units as appropriate.

### Faculty Resources

Please address the impact on faculty resources including any changes in numbers of faculty, class size, teaching loads, student-faculty ratios, etc. Describe how the unit will support student advising, including job placement and/or admission to advanced studies.

No impact is expected due to these revisions.

### Library Resources

Describe your proposal's impact on the University Library's resources, collections, and services. If necessary please consult with the appropriate disciplinary specialist within the University Library.

No impact is expected due to these revisions.

## EP Documentation

### EP Control Number

EP:22.052

### This proposal requires HLC inquiry

Yes

## DMI Documentation

### Banner/Codebook Name

PHD:Computer Science -UIUC

### Program Code:

10KS0112PHD

### Major Code

0112

### Program Reviewer Comments

**Deb Forgacs (dforgacs) (Mon, 27 Sep 2021 16:24:54 GMT):**Re-entered the proposal type, the corresponding program and the CIP code due to system bug 09/27/2021

**Keri Pipkins (kcp) (Wed, 06 Oct 2021 17:45:33 GMT):**Rollback: Please clarify who will approve the "other approved degrees" and how those decisions will be made. Please address the red box around the CS 599 credit.

Key: 181

**Revisions to CS PhD, Fall 2021**

<b>Key</b>
<b>GREEN HIGHLIGHT</b> = Updates to coursework specification or hours
<b>RED HIGHLIGHT</b> = Coursework specification or hours removed from currently listed requirements.

**A) Entering with approved M.S. degree - to be renamed Entering with approved M.S. degree in Computer Science**

Current Requirement	Current Hours	Revised Requirements	Revised Hours
CS 599 Thesis Research (minimum applied toward degree)	32	CS 599 Thesis Research (minimum applied toward degree)	32
500-level course work (12 hours must be CS courses)	16	CS 500-level course work (Does not include CS 597 nor CS 591)	12
		Additional 500-level course work (Does not include independent study nor seminar hours)	4
		Remaining thesis research credit or graduate-level course work (Minimum applied toward degree. 400- or 500-level) Thesis research hours must be CS 599. Individual study hours must be CS 597, seminar hours must be CS 491/591. Not to exceed 16 hours of CS 597 and 8 hours of CS 491/591 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 TAsip.	16
Additional graduate-level course work or thesis research credit (subject to Other Requirements and Conditions below)	16		
<b>Total Hours</b>	<b>64</b>	<b>Total Hours</b>	<b>64</b>

**Other Requirements and Conditions**

Current Requirements and Conditions		Revised Requirements and Conditions	
Other Requirements and Conditions may overlap		Other Requirements and Conditions may overlap	
Minimum hours of CS course work:	12		
CS 597 and CS 591 may not be applied to the 500-level course work requirement.			
CS 591 section PHD must be taken in the first semester. A maximum of 4 credit hours of CS 591 can be applied toward the Ph.D. degree.			
A teaching assistantship for an entire term, with a satisfactory performance evaluation by the department, is required by the end of the 5th year.		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:		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.		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 <sup>1</sup>		Qualifying exam <sup>1</sup>	
Preliminary exam <sup>2</sup>		Preliminary exam <sup>2</sup>	
Final exam or dissertation defense <sup>3</sup>		Final exam or dissertation defense <sup>3</sup>	
Dissertation deposit <sup>4</sup>		Dissertation deposit <sup>4</sup>	
Minimum GPA:	3	Minimum GPA:	<b>3.0</b>

**B) Entering with other approved graduate degree** (New category added in this revision cycle)

New Requirements	New Hours
CS 599 Thesis Research (minimum applied toward degree)	32
CS 500-level course work (Does not include CS 597 nor CS 591)	12
Additional 500-level course work (Does not include independent study nor seminar hours)	4
Supplementary CS Graduate-level 400- or 500-level course work (Minimum applied toward degree.) Does not include independent study nor seminar hours	8
Remaining thesis research credit or graduate-level course work (Minimum applied toward degree. 400- or 500-level) Thesis research hours must be CS 599. Individual study hours must be CS 597, seminar hours must be CS 491/591. Not to exceed 16 hours of CS 597 and 8 hours of CS 491/591 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.	16
<b>Total Hours</b>	<b>72</b>

<b>New Requirements and Conditions</b>	
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 <sup>1</sup>	
Preliminary exam <sup>2</sup>	
Final exam or dissertation defense <sup>3</sup>	
Dissertation deposit <sup>4</sup>	
Minimum GPA:	<b>3.0</b>

**C) Entering with B.S. degree**

Current Requirement	Current Hours	Revised Requirements	Revised Hours
CS 599 Thesis Research (minimum applied toward degree)	32	CS 599 Thesis Research (minimum applied toward degree)	32
500-level course work (12 hours must be CS courses)	24	CS 500-level course work (Does not include CS 597 nor CS 591)	12
		Additional 500-level course work (Does not include independent study nor seminar hours)	4
		Supplementary CS Graduate-level 400- or 500-level course work (Minimum applied toward degree.) Does not include independent study nor seminar hours	8
400- or 500-level course work	24	Additional graduate-level 400- or 500-level course work 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.	24
Additional graduate-level course work or thesis research credit (subject to Other Requirements and Conditions below)	16	Remaining thesis research credit or graduate-level course work (Minimum applied toward degree. 400- or 500-level) Thesis research hours must be CS 599. Individual study hours must be CS 597, seminar hours must be CS 491/591. Not to exceed 16 hours of CS 597 and 8 hours of CS 491/591 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.	16
<b>Total Hours</b>	<b>96</b>	<b>Total Hours</b>	<b>96</b>

**Other Requirements and Conditions**

Current Requirements and Conditions		Revised Requirements and Conditions	
Other Requirements and Conditions may overlap		Other Requirements and Conditions may overlap	
Minimum hours of CS course work:	12		
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CS 591 section PHD must be taken in the first semester. A maximum of 4 credit hours of CS 591 can be applied toward the Ph.D. degree.			
A teaching assistantship for an entire term, with a satisfactory performance evaluation by the department, is required by the end of the 5th year.		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:		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.		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 <sup>1</sup>		Qualifying exam <sup>1</sup>	
Preliminary exam <sup>2</sup>		Preliminary exam <sup>2</sup>	
Final exam or dissertation defense <sup>3</sup>		Final exam or dissertation defense <sup>3</sup>	
Dissertation deposit <sup>4</sup>		Dissertation deposit <sup>4</sup>	
Minimum GPA:	3	Minimum GPA:	<b>3.0</b>