DOCTOR OF PHILOSOPHY IN THE FIELD OF COMPUTER SCIENCE

Program Overview

The doctoral degree is based on coursework as well as research that leads to a dissertation. It is recommended that students interested in the doctoral degree contact the faculty member whose research interests best aligns with their own interest. Areas of research focus center around these topics: computer security and information assurance, software engineering and systems, bioinformatics and biomedical computing, networking and mobile computing, pervasive computing and embedded systems, machine intelligence, robotics, and algorithms and theory.

More information is available on the department website (https://www.cs.seas.gwu.edu/phd-computer-science/).

REQUIREMENTS

The following requirements must be fulfilled:

The general requirements stated under School of Engineering, Doctoral Program Regulations (http://bulletin.gwu.edu/engineering-applied-science/#Doctor_of_Philosophy).

Students with an MS degree—A minimum of 30 credits, at least 18 of which must be in courses taken for graduate credit and at least 12 credits in dissertation research. Courses must be approved by the student’s advisor.

Students with a BS degree—A minimum of 54 credits, at least 18 of which must be in courses taken for graduate credit and at least 12 credits in dissertation research. Courses must be approved by the advisor. In some cases, particularly when the student undertakes a doctoral program in a field other than that in which the earlier degree was earned, the program of study exceeds the minimum number of credits. No specific courses are required; the student and advisor design the curriculum to meet the student’s needs and goals.

Preliminary Examination

Failure to pass the preliminary examination by the end of the fourth semester will lead to dismissal from the PhD program.

Students must demonstrate competency in two areas, one course per area:

- Algorithms and Theory: CSci 6212 Design and Analysis of Algorithms; CSci 6311 Theory of Computation
- Software and Systems: CSci 6221 Advanced Software Paradigms; CSci 6431 Computer Networks; CSci 6461 Computer Architectures

Students may demonstrate competency in a course in one of two ways:

- By completing the course with a minimum grade of A-.
- By taking only the written, in-class examinations in the course. With this option, students must pass all exams given during a semester, earning a minimum grade of A- in each.

Students who prove, via their official transcript that they earned the requisite grades as part of their master’s degree may apply that result to the preliminary exam requirement.

Students must fill out and submit to the Department of Computer Science a Preliminary Examination Form (https://www.cs.seas.gwu.edu/forms/) after completing the requirements for the preliminary exam.

Publication Requirements

Students must have at least one peer-reviewed conference or journal paper accepted for publication at the time of the dissertation defense.

As a guideline, students are expected to have at least two or three conference or journal papers accepted for publication by the time of their dissertation defense, and the material from those papers should be the core of the dissertation.

Dissertation

Forming a dissertation committee:

- The dissertation committee must consist of at least three members including the major advisor (additional advisor(s) and co-advisors are optional and additional to the three members).
- The committee must have a presiding chair who must be a regular full-time faculty member in the Department of Computer Science. The committee chair may not be the student’s research advisor or co-advisor.
- At least one member of the committee must be an external reviewer. The external reviewer can be any person who holds a Doctoral degree, and may not be a faculty member in the Computer Science department, but may be a researcher or faculty member from another GW department or from outside the University.
- The other members of the committee, not including advisor(s) and co-advisors, shall be regular full-time faculty of the Department of Computer Science or a doctorate-bearing researcher or faculty member from another GW department or from outside of the University.
- The dissertation committee must be approved by the chair of the Department of Computer Science.
- The committee membership is normally the same for the dissertation proposal exam and the dissertation defense. However, the membership may change with the approval of the advisor and department chair.

Dissertation proposal defense:
• The defense may not take place before the student has passed the preliminary examination.
• The student’s advisor must approve the scheduling of the dissertation proposal defense.
• The student submits a written proposal, in the style of a dissertation, to the members of the dissertation committee. The proposal should contain preliminary results.
• The dissertation committee evaluates the proposal and conduct an oral examination of the student. The committee conveys its recommendation of pass/fail to the Department of Computer Science.

Dissertation defense:
• The dissertation defense may not be scheduled before the student has passed the dissertation proposal defense.
• The student’s advisor must approve the scheduling of the dissertation defense.
• The committee evaluates the dissertation and conducts an oral examination of the student. The committee conveys its recommendation of pass/fail to the Department of Computer Science.

Colloquium Expectation
All full-time PhD students are expected to regularly attend department colloquiums.

Graduation and Scholarship Requirements
Students are responsible for knowing the University’s requirements for graduation and scholarships. Consult the University Regulations (http://bulletin.gwu.edu/university-regulations/#GGraduation) section of this Bulletin. Students should consult the department for additional information and requirements.