

COMPUTER SCIENCE

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The Department of Computer Science offers graduate courses and research leading to the Master of Science, Master of Arts, and Doctor of Philosophy degrees in Computer Science.

Master of Science and Master of Arts

ADMISSION

A student entering the program must have the core components of an undergraduate computer science curriculum. In mathematics, students must have successfully completed course work equivalent to Discrete Mathematics (CS/MATH 31011), Calculus I (MATH 12002), Calculus II (MATH 12003), and Linear Algebra (MATH 21001). In computer science, students are required to have successfully completed coursework equivalent to Data Structures (CS 33001), one additional introductory programming course (CS 23021), Computer Architecture (CS 35101), Operating Systems (CS 33211), and Design & Analysis of Algorithms (CS 46101).

PROGRAM REQUIREMENTS

The Master's program requires a total of 32 graduate level credit hours in Computer Science (courses outside CS must be approved by the advisor and Graduate Coordinator). Twenty six of these credit hours must be in coursework at the 60000 level or above. Only a total of three credit hours of CS 69098 Research or CS 89991 Research Seminar in Computer Science may count towards the degree (however, students are allowed to take these courses multiple times).

The student must develop a Master's Plan of Work that is approved by the advisor and Graduate Coordinator. The Plan of Work must ensure that the student completes at least one course in three different areas/topics. The Plan of Work must be filled out and submitted to the Graduate Coordinator within one year of entrance to the program, but can later be modified with approval from the advisor and Graduate Coordinator. Further details can be found on the department's web site.

The student must take CS 69191 Masters Seminar (two credits) and make a public presentation of project and/or research work (excluding Thesis or Project defense) a minimum of one time before graduation. The presentation must take place in the Master's seminar at least one full term before graduation and not more than two years after entering the program. This course can be taken multiple

times, but counts for only two credits towards the degree.

MASTER OF SCIENCE

Candidates for the Master of Science degree must write and defend a suitable Master's Thesis for which six credit hours are earned in CS 69199 Thesis I. A Master's Thesis committee must be formed that includes the advisor and at least two other graduate faculty members. The thesis topic and committee must be approved by the advisor and Graduate Coordinator. The final version of the Thesis must be approved by the advisor, committee, and Graduate Coordinator. Further details can be found on the department's web site.

Summary of Master of Science requirements: 24 credits (i.e., typically eight courses, six of which are at the 60000 level or above), plus the Master's Plan of Work, plus two credits CS Masters Seminar and presentation, and plus six credits of CS 69199 Thesis I and Thesis defense.

MASTER OF ARTS

Candidates for the Master of Arts degree are required to enroll for three credit hours in CS 69098 Research under the direction of a graduate faculty member and to develop a Master's Project. A Master's Project committee must be formed that includes the advisor and at least two other graduate faculty members. The committee and project topic must be approved by the Graduate Coordinator. The student must present and defend the project to the committee. Further details can be found on the department's web site.

Summary of Master of Arts requirements: 27 credits (i.e., typically nine courses, seven of which are at the 60000 level or above), plus the Master's Plan of Work, plus two credits CS 69191 Masters Seminar and presentation, and plus three credits of CS 69098 Research and project defense.

Doctor of Philosophy

ADMISSION

A student entering the Doctoral program should hold a Master's degree in Computer Science or closely related discipline. Students with a Master's degree in a closely related discipline must fulfill the admission requirements for a Master's degree in Computer Science. All students must pass the Preliminary Examination within 20 months of entrance into the Doctoral program.

Students with a very strong undergraduate degree in Computer Science may be admitted directly into the Doctoral program but must fulfill the requirements of both the Master's and Doctoral degrees. The time limits for the Preliminary Examination and CS 89191 Doctoral Seminar are extended by 18 months for these students.

PROGRAM REQUIREMENTS

A Doctoral student must complete 60 graduate credit hours beyond the Master's degree - 30 credits of which are CS 89199 Dissertation I and 30 credits (excluding Dissertation I and II) are coursework at the 70000 level or above. Only nine credits of CS 89098 Research or CS 89991 Research Seminar in Computer Science may count towards the degree (however students can take more than nine credit hours of these courses).

The student will develop a Doctoral Plan of Work that is approved by the advisor and the Graduate Coordinator. Students are highly encouraged to select an advisor and develop a Plan of Work as early as possible (i.e., before the end of their second term in the program). The Plan of Work must be filled out and submitted to the Graduate Coordinator within 18 months of entrance to the program.

The Doctoral Plan of Work will define the required coursework in the form of Major and Minor Concentrations. The Major Concentration consists of three courses (nine credits) selected by the advisor that the student must successfully complete. This represents a depth of knowledge in the main research area of the student. The Minor Concentration consists of three additional courses the student (with advisor approval) selects and must successfully complete. This represents depth and/or breadth in related research area(s). The Plan of Work can be modified with approval of the advisor and Graduate Coordinator. Further details can be found on the department's web site.

All students must take three credit hours of CS 89191 Doctoral Seminar and make a public presentation of project and/or research work (excluding Dissertation Defense and Candidacy Examination) at least two times before graduation. The presentation must take place in the Doctoral Seminar at least one full term before graduation and not more than two years after entering the program. The Doctoral Seminar is offered for one or two credit hours; therefore the student must enroll in this course at least two times. This course can be taken multiple times but only three credit hours count toward the degree.

PRELIMINARY EXAMINATION

The Preliminary Examination is intended to assess a student's understanding of the basic prerequisite concepts for entrance into the Doctoral program in Computer Science. It also assures that all incoming students have the ability to effectively reason with and integrate the underlying knowledge and concepts in the broad field of Computer Science. This ability is necessary to continue the student's studies in the Doctoral program.

Students must successfully complete the Preliminary Examination within 20 months of entrance into the program. Complete information about the content

and format of this examination can be found on the department's web site.

CANDIDACY EXAMINATION

The Candidacy Examination is a comprehensive examination in the field of the major subject. The format of the Candidacy Examination will be determined by the student's Candidacy Examination Committee, which is composed of the student's advisor and two other graduate faculty members. The Candidacy Examination Committee must be approved by the Graduate Coordinator. The student must complete the Candidacy Examination at least one year before the Dissertation defense. Further details can be found on the department's web site.

DISSERTATION

A Dissertation describes original research performed by the student. The Dissertation topic must be approved by the advisor and Graduate Coordinator. A Dissertation committee, made up of graduate faculty, must be formed to assess the quality and value of the work. A public Dissertation defense is made by the student. The final Dissertation and defense must be approved by the advisor and Dissertation committee. Further details can be found on the department's web site.

Summary of Doctoral degree requirements: Preliminary Examination, plus the Doctoral Plan of Work, plus three credits of CS 89191 Doctoral Seminar, plus nine credits major concentration course work, plus nine credits minor concentration course work, plus nine credits elective coursework or research, plus Candidacy Examination, and plus 30 credits of CS 89199 Dissertation I along with the Dissertation and defense.

Courses (CS)**CS69191****Masters Seminar (1-2)**

Seminar for Master's students to present and discuss computer science related research and academics. Master's students are required to take at least two credit hours for completion of degree and make at least one presentation of project work or research. This course may be taken multiple times but only two credit hours count toward the Master's degree. Prerequisites: Admission to Master's program.

CS89191**Doctoral Seminar (1-2)**

Seminar for Doctoral students to present and discuss computer science related research and academics. Doctoral students are required to take at least three credit hours for completion of degree and make at least two presentations of project work or research. This course may be taken multiple times but only three credit hours count toward the Doctoral degree. Prerequisites: Admission to Doctoral program.