

MS in Computer Science

Admission

The program admits students with a 4-year bachelor's degree in computer science or a related area. Students from other engineering fields, mathematics or science may be admitted as well with an extra requirement to complete undergraduate level background deficiency courses determined at the time of admission. Such courses will not count towards the MS degree completion requirements.

To be considered for admission to the program the minimum requirements are:

- Student must have earned a GPA of at least 3.000 (or an equivalent score from another country) in the bachelor's degree.
- Students whose bachelor's degree is from an institution outside the U.S. are required to submit official scores of the GRE General Test along with the admission application. While we do not set a minimum score, we would like the quantitative portion of the GRE to be above average.
- Applicants whose native language is not English must provide English proficiency exam scores as described in the Graduate School's admission requirements.

Letters of recommendation are optional but encouraged, especially if the student's GPA and/or GRE do not truly reflect the student's skills and/or abilities.

Program Requirements

Students must choose one of the three graduating options: thesis, project or coursework#only. A total of 30 credit hours of graduate work is required for all options. All courses must be approved by the student's advisor and the graduate coordinator. Students are advised to consult their advisor (if thesis or project option) or graduate coordinator (if coursework only option) before taking any courses especially if they are below 600 level or offered outside the department (i.e., for courses that are not ECE or CS prefixed).

Students are strongly advised to choose courses in consultation with their advisor and/or graduate coordinator before completing their first semester. To ensure that students take relevant courses, students should seek approval from their advisor or graduate coordinator at each semester unless they have filed a plan of study. Courses that are taken without prior approval may affect the plan of study process, if deemed not to satisfy the graduation requirements.

Graduating Options

Thesis Option

Students need to complete an in-depth research project. Students should conduct extensive literature review, identify gaps, propose a research question, and seek a solution to the research question. This is ideal for students who desire to develop their research skills or plan to pursue a research career. Students will defend their findings to their thesis committee. One out of the three committee members must be outside the home department. Students are encouraged to take 6 credit hours of individual reading courses with their advisors leading to taking thesis credits.

Course	Title	Hours
CS 721	Advanced Algorithms and Analysis	3
CS 892	Thesis	6
Select 21 credit hours of graduate courses (except CS 891)		21
At most 6 credit hours of CS 893 Individual Reading		
At most 10 credit hours below 700 level		

At most 6 credit hours of non-ECE or non-CS prefixed courses

Total Credit Hours 30

Project Option

Students solve a specific problem or an issue of significance. Students will apply their hands-on expertise and implement a solution to interesting problems. Students will identify a problem, define a solution approach, implement it, collect necessary data and analyze. Upon which, they shall submit a written project report to a committee of three faculty members (with graduate status) and present their findings. Students are encouraged to take 3 credit hours of individual reading courses with their advisors leading to taking project credits.

Course	Title	Hours
CS 721	Advanced Algorithms and Analysis	3
CS 891	Project	3
Select 24 credit hours of graduate courses (except CS 892)		24
At most 3 credit hours of CS 893 Individual Reading		
At most 10 credit hours below 700 level		
At most 6 credit hours of non-ECE or non-CS prefixed courses		
At least 3 credit hours of 800 level or above courses with ECE or CS prefixes		
Total Credit Hours		30

Coursework Option

Course	Title	Hours
CS 721	Advanced Algorithms and Analysis	3
Select 27 credit hours of graduate courses		27
No credit hours of CS 891, CS 892 and CS 893 Individual Reading		
At most 10 credit hours below 700 level		
At most 6 credit hours of non-ECE or non-CS prefixed courses		
At least 6 credit hours of 800 level or above courses with ECE or CS prefixes		
At least 3 credit hours of applied learning component courses		
Total Credit Hours		30

Applied Learning

Students in the MS in computer science program (including students in the coursework option) are required to complete an applied learning or research experience to graduate from the program. The requirement can be met by completing at least 3 credit hours of major courses with a research writing and presentation component that is applied to the plan of study with a C or better grade. Currently approved courses are:

- CS 770 Machine Learning
- CS 798 Individual Projects
- ECE 794 Parallel Computing
- CS 834 Advanced Routing and Switching
- CS 891 Project
- CS 892 Thesis
- CS 898AZ Accessible Computing
- CS 898AE Software Analysis Methodologies
- ECE 875 Computer Systems in Data Analytics
- CS 898AM Cyberphysical System Security
- CS 797V Artificial Intelligence for Cybersecurity
- CS 898AW Artificial Intelligence for Robotics
- CS 898CE Human Computer Interaction
- CS 898AZ Accessible Computing
- CS 898BA Image Analysis and Computer Vision
- CS 898BG Reinforcement Learning

- CS 898CE Human Computer Interaction
- CS 898CA Introduction to Intelligent Robotics
- CS 898CD Trusted Execution for Embedded Systems
- ECE 694 High Performance Computer Systems
- ECE 826 Digital Communication Systems II
- ECE 891 Advanced Topics for Next Generation Power Grid
- ECE 836 5G and Beyond Wireless Communications
- ECE 886 Error Control Coding
- ECE 986 Wireless Spread-Spectrum Communication
- CS 865 Principles of DBMS Implementation
- CS 898 Special Topics