

COMPUTER SCIENCE

Degree: Master of Science
 Department: Computer Science
 Building 79, Room 102
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 College: Arts and Sciences

The Computer Science Department offers two graduate specializations: Computer Science (CS) and Software Engineering (SE). The CS specialization provides instruction in applied and theoretical computer science topics such as networks and communication devices, theory of computation, analysis of algorithms, programming languages, and operating systems. The SE specialization concentrates on software engineering concepts such as specification, design, and verification and validation. Both specializations prepare the student for either employment or doctoral level research work. Numerous local and regional companies and governmental agencies employ computer science students in cooperative education programs (co-op).

The Department annually awards several scholarships, fellowships, and out-of-state tuition waivers to new and returning students. The department also has limited opportunities for teaching/research assistantships and graders for new and returning students. Contact the department chairperson for information.

In addition to general University requirements, students seeking the M.S. in Computer Science must meet the requirements listed below.

Course descriptions are listed alphabetically by prefix in the back of this *Catalog*.

ADMISSION REQUIREMENTS

In addition to the general University requirements, students seeking the M.S. Degree in Computer Science must meet the following requirements:

- A. Applicants must hold a Bachelor of Science (B.S.) Degree in Computer or Information Science or a related technical field from an accredited institution. Applicants must have a minimum cumulative GPA of 3.0 on a 4.0 scale from the undergraduate institution. Applicants with undergraduate degrees in other disciplines may also be considered for admission, especially if they have significant work experience related to one of the graduate specializations.
- B. Applicants must provide Graduate Records Examination (GRE) scores that are not more than five years old. Applicants must achieve minimum scores of 500 on both the verbal and quantitative sections of the test and must have an aggregate score (verbal + quantitative) of 1100.
- C. Applicants must provide three letters of reference from individuals who can evaluate the applicant's academic ability.
- D. Applicants must provide a letter of intent describing the applicant's experience as it relates to the field and stating the applicant's future goals.

Prospective students must submit application materials by March 1 to be considered for the Summer semester, by June 1 to be considered for the Fall semester, or by October 1 to be considered for the Spring semester. Applications may be considered at other times under special circumstances. Contact the Department for more information or to speak with the Graduate Director.

Non-degree students may be given a tentative degree plan by the graduate director. Upon admission to the program, students may petition the department chairperson to count up to 12 semester hours of graduate level course work taken while enrolled as a non-degree student towards their graduate degree.

Graduate students develop a degree plan with the graduate director before or during their first semester of graduate work. All students must complete University requirements and a planned degree program with a 3.0 cumulative grade point average and a minimum grade of "C" in all core courses. Students electing to write a thesis for either specialization take 24 semester hours of graduate courses, 6 semester hours of thesis, and must pass an oral examination concerning the contents of their thesis. Students electing the project specialization must take: for the CS specialization, 33 semester hours of course work and a 3 semester hour project course; or for the SE specialization, 30 semester hours of course work and a 6 semester hour project course.

4000-6000 level courses (CAP, CDA, CEN, CIS, COP and COT) are acceptable electives. Project courses in the non-program specialization of a student are not acceptable electives. Up to 6 semester hours of 4000-6000 level electives that further the objectives of an individual program may also be chosen from the offerings of other departments with the approval of the graduate director and the chairperson of the Computer Science Department.

COMPUTER SCIENCE SPECIALIZATION

FOUNDATIONAL PROFICIENCIES

CDA 3100	Microprocessor Systems	3
CEN 3031	Introduction to Software Engineering	3
CEN 4516	Computer Networks	3
COP 4020	Programming Languages	3
COP 4600	Operating Systems	3
COP 4601	Software Systems	3
COT 4400	Analysis of Algorithms.....	3
COT 4420	Theory of Computation	3

The graduate director will construct an initial degree plan and recommend an appropriate sequencing of prerequisites, or additional courses, if needed.

DEGREE REQUIREMENTS

Computer Science Core:

CDA 6158	Advanced Computer Architecture	3
CEN 6064	Software Design	3
CEN 6520	Advanced Computer Networks	3
COP 6025	Advanced Programming Languages	3
COP 6611	Advanced Computer Operating Systems	3

Computer Science Specialization:

CAP 5600	Introduction to Artificial Intelligence	3
COT 6415	Computation & Complexity	3
Approved electives (chosen in consultation with advisor)		
	With thesis option	3
	With project option	12

Choose one:

CIS 6971	Thesis	6
Course offered 1-6 sh per semester		
COT 6931	Computer Science Project	3

SOFTWARE ENGINEERING SPECIALIZATION

FOUNDATIONAL PROFICIENCIES

CDA 3100	Microprocessor Systems	3
CEN 3031	Introduction to Software Engineering	3
CEN 4516	Computer Networks	3
COP 4020	Programming Languages	3
COP 4600	Operating Systems	3
COP 4601	Software Systems	3
COP 4710	Database Systems	3

The graduate director will construct an initial degree plan and recommend an appropriate sequencing of prerequisites, or additional courses, if needed.

DEGREE REQUIREMENTS

Computer Science Core:

CDA 6158	Advanced Computer Architecture	3
CEN 6064	Software Design	3
CEN 6520	Advanced Computer Networks	3
COP 6025	Advanced Programming Languages	3
COP 6611	Advanced Computer Operating Systems	3

Software Engineering Specialization:

CEN 6070	Software Testing & Verification	3
CEN 6075	Software Specification & Implementation	3
Approved electives (chosen in consultation with advisor)		
	With thesis option	3
	With project option	9

Choose one:

CEN 6015	Software Engineering Project	6
(3 sh taken for 2 semesters)		
CIS 6971	Thesis	6
Course offered 1-6 sh per semester		