COMPUTER SCIENCE (MS)

Master of Science in Computer Science (CS MS)
Unit: Speed School of Engineering (http://louisville.edu/speed) (GS) (http://louisville.edu/speed)
Department: Computer Engineering and Computer Science (http://louisville.edu/speed/computer)
Program Webpage (http://louisville.edu/speed/computer/graduate-studies)
Academic Plan Code(s): CS_ _MS, CS_ _MS_O

Program Information

This program can be completed in a traditional classroom format or entirely online (http://louisville.edu/online/programs/index/masters/master-of-science-in-computer-science).

The MS degree program is intended for persons having an accredited baccalaureate degree in computer engineering or computer science, but is available to those with other backgrounds. Applicants with other backgrounds should plan on taking some undergraduate background coursework. Students interested in the MS degree program should consult the Director of Graduate Studies in the Department of Computer Engineering and Computer Science. The University of Louisville is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools to award master's degrees.

Degree Requirements

The program of study must be completed with a 3.00 GPA or better for all graduate courses used to satisfy degree requirements. Additionally, the program of study must be completed with a 3.00 GPA or better for all academic work attempted in graduate studies.

The requirements for the Master of Science degree are discussed in more detail in the Degree Requirements (http://catalog.louisville.edu/graduate/general-policies-procedures-requirements/degree-requirements) section of this catalog.

Admission Standards

The admission standards for the Master of Science program in Computer Science are as follows:

1. All admission applications for the program shall include:
   a. A completed application (http://louisville.edu/graduate/apply) for the Graduate School,
   b. An application fee,
   c. Results from the Graduate Record Examination (GRE),
   d. At least two letters of recommendation, and
   e. Official transcript(s) for all previous post-secondary coursework. All transcripts not in English must be certified as authentic and translated verbatim into English.
2. The minimum requirement for admission is the baccalaureate degree or its equivalent from an accredited institution.
3. The successful applicant will typically have an undergraduate grade point average of 2.75 or above (on a 4.00 scale).
4. The successful applicant will typically have a GRE combined Verbal and Quantitative Reasoning score of 295 or above.
5. International students whose primary language is not English must show English language proficiency by either TOEFL/IELTS score or demonstration of a degree award from an acceptable English language institution. The successful applicant will typically have a total TOEFL score of 80 or higher or overall IELTS score of 6.5 or higher.

Program Requirements

Remedial work may be specified for those applicants who, in the opinion of the faculty, do not have a sufficient background.

The minimum curricular requirements for the master's program are:

Code	Title	Hours
MS in Computer Science Coursework		
Foundations Course (see list below) [1]		3
Software Courses (see list below) [2]		6
Analytic Courses (see list below) [3]		6
CECS Electives [4]		9
Select one of the following:		6
Thesis Option		
CECS 690	Master of Science Thesis in Computer Science [5]	
Non-Thesis Option		
CECS 696	CECS Project	
CECS Elective [4]		
Minimum Total Hours		30

The Master of Science degree must be completed with a 3.00 GPA or better for all graduate courses used to satisfy degree requirements. Additionally, the master of science degree must be completed with a 3.00 GPA or better for all academic work attempted in graduate studies.

1 One Foundations Course from the list below is required
2 Two Software Courses from the list below are required
3 Two Analytic Courses from the list below are required
4 Electives must be chosen so that at least one-half of the credits counted toward the degree, exclusive of thesis, are 600-level; at least fifteen (15) credit hours of coursework must be in CECS.
5 For the thesis option, a student is required to select both an approved MS thesis topic and the director and members of the thesis committee during the first term of Graduate Studies. The thesis director must give approval for enrollment in CECS 690.

Approved Courses

Foundation Courses

Code	Title	Hours
CECS 504	Automata Theory	3
CECS 619	Design and Analysis of Computer Algorithms	3

Software Courses

Code	Title	Hours
CECS 516	Fundamentals of Computer Communications and Networks	3
CECS 535	Introduction to Databases	3
CECS 545	Artificial Intelligence	3
CECS 550	Software Engineering	3
CECS 625	Parallel Programming	3
CECS 629	Distributed System Design	3

CECS 630	Advanced Databases	3
CECS 640	Internet Application Design and Development	3

Analytic Courses

Code	Title	Hours
CECS 506	Modeling and Analysis of Engineering Systems	3
CECS 522	Performance Evaluation of Computer Systems	3
CECS 563	Experimental Design in Engineering	3
CECS 620	Combinatorial Optimization and Modern Heuristics	3
CECS 622	Simulation and Modeling of Discrete Systems	3
CECS 627	Digital Image Processing	3
CECS 632	Data Mining	3