



**KENTUCKY STATE
UNIVERSITY**

MASTER OF SCIENCE IN COMPUTER SCIENCE

The Computer Science program is housed in the School of Agriculture, Community, Environment, and the Sciences (ACES) which is in the College of Agriculture, Community, and the Sciences. The School of ACES offers programs of study leading to the Master of Science in Computer Science (MSCS). Admission requirements include good undergraduate academic standing, GRE scores for applicants with less than a GPA on a 4.00 scale, and three recommendations from instructors or current employers (for applicants working in the field of technology). A prospective candidate may or may not have an undergraduate baccalaureate degree in computer science. A candidate with a non-computer science degree must show great motivation towards learning in the technological fields.

Students with an undergraduate degree in computer science (Plan A) will directly proceed to the core courses. However, the students with undergraduate degrees in fields other than computer science (Plan B) must complete 9 hours of intensive foundation courses to gain the proficiency needed in the areas of computer programming, data structures, discrete mathematics, and computer organization. After completion of the foundation courses, students in Plan B will move on to the core courses.

Both thesis and non-thesis options are available in the program leading to the Master of Science degree. Six (6) hours of thesis or two (2) additional electives are required in the non-thesis option.

Students can also choose from the **Information Engineering (IE) or Cybersecurity (SE)** concentrations. The total number of hours required is 30, which includes 15 hours of core courses and 9 hours that students select from the option of their choice. In addition, the students complete 6 hours of (COS 796 Project Course or COS 799 Thesis. The last two options are recommended for candidates who plan to pursue employment in the computer industry after completion of the master's degree or who are currently gainfully employed. The students completing the degree will have a broad knowledge in various subject areas which include Operating Systems, Computer Architecture, Networking, WEB Programming, Software Engineering, Databases, Computer Programming, Artificial Intelligence, Computer Security, Cryptography, Advanced Algorithms, Information Security, Secure System Administration, Database Security, and Network Security.

Admission to the Master of Science in Computer Science Program

Regular Admission Requirements

The Master of Computer Science program admits only students whose preparation indicates potential for a high level of success. Regular admission may be granted on the basis of one of the following two categories of requirements. Both categories are designed to ensure that MSCS students are likely to succeed in professional graduate study

also have the potential for career success in the computer science field. Admission to the program is subject to Computer Science Division Graduate Admission Committee Approval and the following requirements.

Requirement 1:

1. Baccalaureate degree in computer science or related discipline from an institution in the United States with regional accreditation or from a foreign institution with comparable accreditation.
2. An overall undergraduate grade-point-average of 3.00 (on a 4.00 scale).
3. Official transcripts of all undergraduate and graduate work indicating all degrees awarded and courses taken

Requirement 2:

1. Baccalaureate degree from an institution in the United States with regional accreditation or foreign institution with comparable accreditation.
2. An overall undergraduate grade-point-average of 2.50 (on a 4.00 scale).
3. Official transcripts of all undergraduate and graduate work indicating all degrees awarded and courses taken.
4. GRE scores required if GPA is less than a 3.00 on a 4.00 scale.

Transfer of Credit

Candidates for this Master's degree are restricted to a maximum of nine semester credit hours by transfer of work completed at another accredited graduate institution. Official copies of transcripts must be submitted and evaluated before any transfer credit can be accepted. Certain courses submitted for transfer may not be considered equivalent to specified program requirements even if course titles are the same.

Graduate Assistantships

A limited number of graduate assistantships are available for full-time students pursuing the Master of Science in Computer Science degree. Students holding these positions work 20 hours per week and receive stipends. Graduate Assistants assist the faculty members in their instructional and research activities. Students interested in such positions apply to the Division's office. Assistantships are awarded on the basis of financial need and high academic achievement.

Requirements for the Master of Computer Science Degree

Students can be admitted in one of the two plans: **Plan A** or **Plan B**:

Plan A is for students who have an undergraduate degree in Computer Science or related field. These students will skip the foundation courses and can immediately begin with the core courses stated later.

Plan B is for students who have an undergraduate degree in a field other than Computer Science, have not taken prerequisite undergraduate computer science courses, but are interested in retraining in the computer field. These students are required to complete the following 9 hours of intensive foundation courses. The sequence in which they must be taken is determined by the MSCS Graduate Program Coordinator. The three foundation courses are:

Code	Title	Hours
COS 502	Computer Science Foundation I	3
COS 504	Computer Science Found II	3
COS 505	Computer Science Found III	3

Total Courses

Students may select one of the areas of concentration: Information Engineering (IE) or Cybersecurity (SE). In the IE or SE option, they must select five core courses. In addition to core courses, students must take three IE specialty and two elective courses from their option or 6 hours of thesis. In SE option, they must select three SE specialty and two elective courses or 6 hours of thesis.

Code	Title	Hours
Required Core Courses		
COS 506	Adv Programming/Data Structure	3
COS 515	Adv Database Manage Systems	3
COS 536	Software Engineering	3
COS 570	Adv Comp Architecture/Software	3
COS 585	Information Security	3
Concentration		
Select three courses from concentration		9
Thesis Option		
Select six credit hours of thesis or non-thesis courses		6
Total Hours		30

Information Engineering (IE) Concentration

Code	Title	Hours
COS 514	Database and Data Mining	3
COS 519	Managing Info Technology	3
COS 520	Multimedia Design	3
COS 571	Software Assurance	3

Cybersecurity (SE) Concentration

Code	Title	Hours
COS 533	Cryptography Algorithms	3
COS 583	Enterprise Secur Managements	3
COS 586	Information System Assurance	3
COS 588	Computer Network Security	3

Non-Thesis Option

Code	Title	Hours
COS 599	Special Topics in Technology	3
COS 697	Independent Study	3
COS 698	Intern in Computer Science	3
COS 796	Project Course	3

Thesis Option

Code	Title	Hours
COS 797	Residence Cred Thesis/Prof Prj	0
COS 799	Thesis	3
COS 799	Thesis	3

Master's Thesis

Students submitting a thesis in partial fulfillment of the master's degree must prepare it in conformity with the regulations approved by the Computer Sciences Graduate Student Committee. Three (3) approval

pages bearing original signatures of the graduate committee must be included with three (3) typewritten, clear, unbound copies of the thesis, all presented to the Division of Computer Science Graduate Student Committee at least two weeks prior to the end of summer school and three weeks prior to the end of the Fall or Spring semester. Two (2) copies are bound and become a property of the Program; one (1) copy is bound and becomes a property of Blazer Library. A thesis must be developed under the direction of a full-time member of the Graduate Faculty.

Minimum Hours Required

The Master of Science in the Computer Science Degree Program requires a minimum of thirty (30) semester credit hours, not including the foundation courses.

Thesis Defense

This option is only for students who have decided to work on a thesis. It is imperative that all candidates with a thesis option and a project option must defend their work. The graduate committee may declare a candidate successful or may ask him/her to repeat the defense.

Anyone not successful after two attempts will be terminated with no degree conferred from the MSCS program.

Time Limit for Degree Completion

All program requirements must be completed within three (3) years from initial admission for full-time and four (4) years for part-time students from initial admission, unless otherwise approved by the Computer Science Graduate Program Coordinator. Time to complete cannot be greater than six (6) years from initial admission per University requirements.

Repeat Option

A student may repeat a graduate course. The lower grade is removed and does not count toward total hours or toward the student's grade-point-average. This action will be initiated by the petition of the student to the MSCS Graduate Program Coordinator and the Division of Computer Sciences and may be done only once per course.

Probation

If, upon completion of 12 or more semester credit hours of graduate course work, a student has a GPA of less than 3.0, he/she is placed on academic probation. The student will have one full-time semester or the equivalent (9 semester credit hours) to remove the scholastic probation by attaining a 3.0 cumulative GPA.

Dismissal

If probation is not removed during the next semester, students will be dismissed from the program. Students who have been dismissed from the program for this reason may apply for re-admission after one semester. Readmitted students will have one full-time semester or its equivalent (9 semester credit hours) to remove the scholastic probation by attaining a 3.0 average. Students placed on scholastic probation are not eligible for assistantship. Enrollment may be terminated for any of the following reasons:

1. Scholastic probation for three semesters of enrollment.
2. Two unsuccessful attempts to defend the thesis, the project, or the final **exit** and oral examination.