

# Computer Science

College of  
Engineering

The computer science program prepares students to identify computational problems in all areas of modern life, to design, implement, and analyze algorithmic solutions, and to build software for a variety of applications. Through required, elective and special topics courses students are exposed to the foundations and current practices of computing and algorithms, software engineering, programming languages, operating systems, graphics and multimedia, scientific computing and numerical analysis, databases, artificial intelligence and networks.

## Pre-Computer Science Requirements

In order to graduate and take most of the 300 level and above computer science courses, a student must attain engineering standing. To attain engineering standing a student must complete the following courses with a grade-point average of at least 2.50:

	Hours
CIS/WRD 110 Composition and Communication I .....	3
MA 113 Calculus I .....	4
MA 114 Calculus II .....	4
CS 100 The Computer Science Profession .....	1
CS 115 Introduction to Computer Programming .....	3
CS 215 Introduction to Program Design, Abstraction, and Problem Solving .....	4
CS 275 Discrete Mathematics .....	4
PHY 231 General University Physics .....	4
PHY 241 General University Physics Laboratory .....	1

## Degree Requirements

In addition to satisfying UK Core requirements, each student completes the following:

### Freshman Year

First Semester	Hours
CS 100 The Computer Science Profession .....	1
CS 115 Introduction to Computer Programming .....	3
CIS/WRD 110 Composition and Communication I .....	3
MA 113 Calculus I .....	4
UK Core [U] .....	3

### Second Semester

CS 215 Introduction to Program Design, Abstraction, and Problem Solving .....	4
Natural Science Elective [N] .....	3
MA 114 Calculus II .....	4
UK Core – Statistical/Inferential Reasoning [U] .....	3

### Sophomore Year

First Semester	Hours
CS 216 Introduction to Software Engineering .....	3
EE 280 Design of Logic Circuits .....	3
MA 213 Calculus III .....	4
PHY 231 General University Physics .....	4
PHY 241 General University Physics Laboratory .....	1
CIS/WRD 111 Composition and Communication II .....	3

## Second Semester

CS 275 Discrete Mathematics .....	4
CS/EE 380 Microcomputer Organization .....	3
PHY 232 General University Physics .....	4
PHY 242 General University Physics Laboratory .....	1
STA 281 Probability and Statistics Using Interactive Computer Techniques .....	3
UK Core [U] .....	3

## Junior Year

First Semester	Hours
CS 315 Algorithm Design and Analysis .....	3
CS/MA 321 Introduction to Numerical Methods .....	3
UK Core [U] .....	3
ENG 2XX Writing Intensive Course .....	3
Elective [E] .....	3

## Second Semester

CS 375 Logic and Theory of Computing .....	3
Computer Science Elective [C] .....	3
Technical Elective [T] .....	3
UK Core [U] .....	3
Natural Science Elective [N] .....	3
Elective [E] .....	3

## Senior Year

First Semester	Hours
CS 470G Introduction to Operating Systems .....	3
Computer Science Elective [C] .....	3
Technical Elective [T] .....	3
UK Core [U] .....	3
Elective [E] .....	4

## Second Semester

CS 499 Senior Design Project .....	3
Computer Science Elective [C] .....	3
Technical Electives [T] .....	6
Elective [E] .....	3

[U] – Select to satisfy the UK Core areas Arts and Creativity, Humanities, Social Sciences, Citizenship, Global Dynamics).

[N] – Any natural science course excluding more elementary versions of completed required courses.

[C] – Computer Science Elective – include 300-level and above computer science courses with two to be selected from: CS 335, CS 405G, CS 441G, CS 450G and CS 463G. Students are encouraged to take advantage of special topics courses, cooperative education, independent studies and undergraduate research.

[T] Technical Elective – include any 300-level and above courses in computer science, electrical engineering, mathematics and business and economics. MA 214 is also an acceptable technical elective. Cooperative education credit may be used to satisfy this requirement.

[E] Elective – including one Free Elective and Non-Technical Elective. At least two of the electives (6 credits) cannot be in computer science, mathematics, science or engineering. Note: At least 128 credit hours; a foreign language requirement.

University of Kentucky is accredited by the Southern Association of Colleges and Schools Commission on Colleges. Contact the Commission on Colleges at 1866 Southern Lane, Decatur, Georgia 30033-4097, call 404-679-4500, or online at <http://www.sacscoc.org> for questions about the accreditation of University of Kentucky.