University of Kentucky

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.

Degree Requirements

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

Freshman Year

First Semester	Hours
EGR 101 Engineering Exploration I § Δ	1
EGR 102 Fundamentals of Engineering Computing	2
CHE 105 General College Chemistry I	
or	
PHY 231 General University Physics º	4
CIS/WRD 110 Composition and Communication I	3
MA 113 Calculus I	4

Second Semester

	Hours
EGR 103 Engineering Exploration II Δ	2
CIS/WRD 111 Composition and Communication II	3
MA 114 Calculus II	4
PHY 231 General University Physics	
or	
CHE 105 General College Chemistry I º	4
PHY 241 General University Physics Laboratory ‡	1
CS 215 Introduction to Program Design, Abstraction, and Problem Solving Techniques	4

Sophomore Year

First Semester	Hours
CS 216 Introduction to Software Engineering Techniques	3
CS 275 Discrete Mathematics	4
EE 280 Design of Logic Circuits	3
MA 213 Calculus III	4
UK Core – Social Sciences	3

Second Semester

	Hours
CS 270 Systems Programming	3
CS 315 Algorithm Design and Analysis	3
Technical Elective [T]	3
UK Core – Humanities	3
Science Elective [S]	3

Junior Year

First Semester	Hours
CS/MA 321 Introduction to Numerical Methods	
or	
MA 322 Matrix Algebra and Its Applications	3
CS 371 Introduction to Computer Networking	3
Computer Science Elective [C]	3
Computer Science Elective [C]	3
STA 381 Engineering Statistics – A Conceptual Approach	3

Second Semester

	Hours
CS 375 Logic and Theory of Computing	3
Computer Science Elective [C]	3
Computer Science Elective [C]	3
Technical Elective [T]	3
UK Core – Citizenship - US	3
Natural Science Elective [N]	3

Senior Year

First Semester	Hours
CS 498 Software Engineering for Senior Project	3
Computer Science Elective [C]	3
Technical Elective [T]	3
UK Core – Global Dynamics	3
Free Elective [E]	4

Second Semester

	Hours
CS 499 Senior Design Project*	3
Computer Science Elective [C]	3
Technical Elective [T]	3
Free Elective [E]	3
Free Elective [E]	3

§ *Transfer students who declare a major will take EGR 215, Introduction to the Practice of Engineering for Transfer Students, in place of EGR 101 and EGR 103.*

Δ *Students must complete both EGR 101 and EGR 103 to fulfill the UK Core Arts and Creativity requirement. Transfer students may satisfy the UK Core Arts and Creativity requirement by taking EGR 215.*

º *Based on advisor consult.*

‡ *Only if enrolled in PHY 231.*

[T] Technical Elective (12 credit hours) – 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.

[S] Science Elective (3 credit hours) – must be selected from UK Core natural science or social science approved list or by consent of department.

[C] Computer Science Elective (18 credit hours) – include 300-level and above computer science courses with three to be selected from: CS 335, CS 378, CS 405G, CS 441G, CS 450G, CS 460G and CS 463G. Students are encouraged to take advantage of special topics courses, cooperative education, independent studies and undergraduate research.

[N] Natural Science (3 elective credit hours) – Any natural science course excluding more elementary versions of completed required courses.

[E] Free Elective (10 credit hours) – can be any course that earns college credit and is not a more elementary version of a required course. 6 credits are not to be in computer science, mathematics, science or engineering.

*Graduation Composition and Communication Requirement (GCCR) course.

University of Kentucky is accredited by the Southern Association of Colleges and Schools Commission on Colleges to award associate, baccalaureate, masters, and doctorate degrees. Contact the Commission on Colleges at 1866 Southern Lane, Decatur, Georgia 30033-4097, call 404-679-4500, or online at *www.sacscoc.org* for questions about the accreditation of University of Kentucky.

2018-2019 Series