COMPUTER SCIENCE

College of Engineering

Computer scientists identify and solve computational problems in all areas of modern life. They use technical skills and computational thinking combined with mathematical concepts, science, problem solving skills and creativity to design and build software, formulate solutions to computing problems and invent new algorithms and better ways of using computers. Computer scientists work in software development companies; telecommunication, manufacturing, transportation, entertainment and e-commerce industries; financial and health care companies; start-up companies, education and government agencies.

FOR MORE INFORMATION, VISIT THESE WEBSITES:

Computer Science: www.cs.uky.edu

University of Kentucky: www.uky.edu

College of Engineering: www.engr.uky.edu

Admissions: www.uky.edu/admissions

Visit Engineering: www.engr.uky.edu/visit

Scholarships: www.uky.edu/financialaid/scholarships

COMPUTER SCIENCE CURRICULUM SAMPLE

This is a sample list of classes a student will take to pursue a degree in computer science. As part of the computer science curriculum, students must complete the pre-engineering requirements, major requirements and general education coursework, called UK Core.

Note: This sample represents the path to a computer science degree. Consult the departmental website for specific details.

Freshman Year

Engineering Exploration I and II	3
Fundamentals of Engineering Computing	2
Calculus I and II	8
Chemistry I and Physics I and Lab	9
Composition & Communication I and II	6
Introduction to Program Design	4
Total hours	**32**

Sophomore Year

Intro to Software Engineering Techniques	3
Design of Logic Circuits	3
Calculus III	4
Discrete Mathematics	4
Systems Programming	3
Algorithm Design and Analysis	3
Technical Elective	3
Science Elective	3
UK Core Courses	6
Total hours	**32**

Junior Year

Intro to Computer Networking	3
Intro to Numerical Methods or Matrix Algebra	3
Logic and Theory of Computing	3
Engineering Statistics	3
Computer Science Electives	12
Natural Science Elective	3
Technical Elective	3
UK Core Course	3
Total hours	**33**

Senior Year

Software Engineering for Senior Project	3
Senior Design Project	3
Computer Science Electives	6
Technical Electives	6
Free Electives	10
UK Core Course	3
Total hours	**31**

PURSUING COMPUTER SCIENCE AT UK

As a computer science major, you will be taught by professors who are recognized leaders in their respective fields and are readily available both inside and outside the classroom to discuss course material, emerging topics of research and the computing profession. Our faculty members have expertise in computing foundations, algorithms, networking, systems, data mining, software engineering, artificial intelligence, and machine learning. Faculty members who recently joined our department bring additional strength in topics such as big data, mobile computing, security, cyber-physical systems, game design/development, and computation storytelling.

CAREER PROSPECTS IN COMPUTER SCIENCE

Because of broad applications, needs and methods, the discipline of computer science offers many attractive, challenging, interesting and socially meaningful careers that appeal to a diverse range of people. A broad range of industries, companies, businesses and agencies employ computer scientists. According to the Bureau of Labor Statistics, computer occupations will constitute 57% of all job openings in STEM (science, technology, engineering and mathematics) fields from 2012-2022. The Office of Labor Statistics has also projected that employment of computer and information technology professions will grow 12 percent from 2018 to 2028, much faster than the average for all occupations, and will offer well-paying jobs.

UNDERGRADUATE RESEARCH IN COMPUTER SCIENCE

Multidisciplinary research opportunities with faculty in their labs provide students with additional breadth and depth in computer science theory and practice. Such experience improves a student's competitiveness for nationwide scholarships and honors; professional computing careers; graduate education and professional school education. We count National Science Foundation Graduate Fellows, Goldwater Scholarship winners and Fulbright program attendees among our recent graduates.

The University of Kentucky's computer science program is accredited by the Engineering Accreditation Commission of ABET, www.abet.org.

Revised August 2020. Information subject to change. For the most up-to-date information on the UK College of Engineering, visit www.engr.uky.edu.

College of Engineering

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