COMPUTER SCIENCE

UK 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.

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

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

Sophomore Year

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

Junior Year

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

Senior Year

Computer Science Electives	6
Free Electives	10
Senior Design Project	3
Software Engineering for Senior Project	3
Technical Electives	6
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.

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. The Office of Labor Statistics projected that employment of computer and information technology professions will grow 12 percent from 2018 to 2028.

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.

CO-OPS

UK provides numerous opportunities to co-op with companies. Students can co-op during the fall, spring or summer semesters. Those who complete three co-op rotations will receive formal recognition on their transcript and a special cord at graduation. Students work with the Co-op Director and their academic advisor to determine the best timing for their co-op experience.

Revised August 2021. Information subject to change. For the most up-to-date information on the UK College of Engineering, visit www.engr.uky.edu.