


# COMPUTER SCIENCE



Computer scientists identify and solve computational problems in all areas of modern life. They use a combination of technical skills and creativity to design and build software, to formulate solutions to computing problems and to invent new and better ways of using computers. The discipline of computer science has many challenging, interesting and socially important careers that appeal to a diverse range of people. Computer scientists are not only employed by software companies, but also by health care companies, government agencies and educational institutions to name a few. In short, the computer science profession is multifaceted and has wide-ranging applications.

## FOR MORE INFORMATION, VISIT THESE WEBSITES:

**Computer Science:** [www.cs.uky.edu](http://www.cs.uky.edu)

**University of Kentucky:** [www.uky.edu](http://www.uky.edu)

**College of Engineering:** [www.engr.uky.edu](http://www.engr.uky.edu)

**Admissions:** [www.uky.edu/admissions](http://www.uky.edu/admissions)

**Visit Engineering:** [www.engr.uky.edu/visit](http://www.engr.uky.edu/visit)

**Scholarships:** [www.uky.edu/scholarships](http://www.uky.edu/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 one of several paths to a College of Engineering degree. Consult the departmental website for details on specific paths.

### 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
<b>Total hours</b>	<b>32</b>

### 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
<b>Total hours</b>	<b>32</b>

### Junior Year

Intro to Computer Network	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
<b>Total hours</b>	<b>33</b>

### 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
<b>Total hours</b>	<b>31</b>

## 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 and artificial intelligence. Faculty members who recently joined our department bring additional strength in modern computer science topics such as machine learning, big data, mobile computing, security and cyber-physical systems.

## Career Prospects in Computer Science

Worried about what you will do after graduation? Good news! 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 Bureau of Labor Statistics has also projected that employment of computer software engineers and computer programmers will increase much faster than the average for all occupations—around 24% between 2016 and 2026. Related occupations, such as information technology managers, have similar prospects for growth.

## Undergraduate Research in Computer Science

A research team of talented undergraduates at UK is helping department chair and professor Brent Seales solve the 2,000-year-old mystery of the Herculaneum scrolls. In March 2018, the team even got to travel to prestigious Oxford University, in the South East region of England, to present their findings. Undergraduate students also helped pioneer the virtual unrolling technique on a scroll found in 1970 at the ancient Ein Gedi synagogue on the western shore of the Dead Sea.

The University of Kentucky's computer science program is accredited by the Engineering Accreditation Commission of ABET, [www.abet.org](http://www.abet.org).

**Revised August 2018.** Information subject to change. For the most up-to-date information on the UK College of Engineering, visit [www.engr.uky.edu](http://www.engr.uky.edu).