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.

Computers are continually changing, so those who choose a career in Computer Science will become life-long learners and will be on the cutting edge of new trends in technology.

**Pursuing Computer Science at UK**

Here at the University of Kentucky, you will be taught by professors who are recognized leaders in their respective fields and are outstanding teachers. The UK College of Engineering Department of Computer Science was ranked 30th among U.S. Ph.D.-granting universities and 16th among public universities by Academic Analytics®. Department of Computer Science professors and instructors are readily available both inside and outside the classroom to discuss course material, emerging topics of research and the computing profession.

You will also enjoy our wonderful facilities. The Department of Computer Science is housed in the Davis Marksbury Building. This building is part of the University of Kentucky Digital Village—a special area of campus dedicated to “all things computing.”

**First-Year Engineering Program**

The University of Kentucky College of Engineering’s First-Year Engineering program is designed to remove as much guesswork from your major selection as possible. Instead of pushing through a major you don’t like, or adding time and expense by changing majors, you can make an informed choice thanks to a hands-on, team experience that exposes you to all of our engineering disciplines from the start.

All incoming first-year and transfer engineering students take part in the First-Year Engineering program. Students take a two-semester series which includes an overview of engineering disciplines, computer programming, computer-aided design, MATLAB, engineering design and analysis, project management, ethics in engineering and teamwork, as well as oral and written technical communication. Once specific course requirements are complete, students are eligible to declare one of the nine undergraduate majors offered within the College of Engineering.

Students may directly enroll as pre-engineering students; however, there are minimum admission requirements. Minimum freshman entry requirements are an ACT math score of 23 or an old SAT (prior to March 2016) math score of 540 or a new SAT (after March 2016) math score of 570. Additionally, students must meet the university’s minimum ACT/SAT reading and writing requirements to be admitted to the College of Engineering. Students not eligible to directly enroll in engineering should contact the Director of Recruitment at visit@engr.uky.edu for alternate pathways.

**Experiential Education**

Growth and learning also happen outside the classroom. They happen in research labs working alongside professors and graduate students. They happen on student design teams in the capstone design courses. They happen on cooperative education rotations and internships with companies all over the country. There are also numerous Education Abroad programs involving international travel and study.

The Engineering Career Development Office is your one-stop shop for assisting you in the development of job, co-op and internship search skills, participation in Education Abroad programs, participation in research endeavors and building career networks, to eventually help you secure a rewarding career in your chosen field of study.

**Student Involvement**

Student organizations are an outgrowth of student interest and serve the needs of a variety of students. Many provide programs that supplement the classroom experience and extend into areas of service for the community. All provide learning and leadership
Computer Science Curriculum Sample
This is a sample list of classes a student will take to pursue a degree in Computer Science. In addition to the Computer Science curriculum, students must complete the pre-engineering 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 websites for details on specific paths.

Freshman Year
Engineering Exploration I and II 3
Fundamentals of Engr Computing 2
Calculus I and II 8
Chemistry I and Physics I and lab 9
Composition & Communication I and II 6
Intro to Program Design 4
Total hours 32

Sophomore Year
Intro to Software Engineering 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 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 Engr for Senior Project 3
Senior Design Project 3
Computer Science electives 6
Technical electives 6
Non-technical electives 3
Free electives 7
UK Core course 3
Total hours 31

Career Prospects in Computer Science
Worried about what you will do after graduation? There is good news here. 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 21% between 2008 and 2018. Related occupations, such as Information Technology Managers, have similar prospects for growth.

Computer Science is a gateway to many fields. A Computer Science education will give you a solid grounding in logic, strategic thinking and teamwork—skills that you can use whether you choose to go on to medical school, business school, law school or another field. Through your elective choices, you can choose to specialize in databases/data mining, networking and systems, artificial intelligence, security or software engineering. Below is a list of some ways you can use a Computer Science education in other career fields.

Biology – sequencing the human genome
Medicine – mining data to identify new drug treatments
Entertainment – creating games, movies and music
Business – analytics and understanding customers’ habits

The University of Kentucky’s Computer Science program is accredited by the Engineering Accreditation Commission of ABET, www.abet.org.

Revised August 2016. Information subject to change. For the most up-to-date information on the UK College of Engineering, visit www.engr.uky.edu.