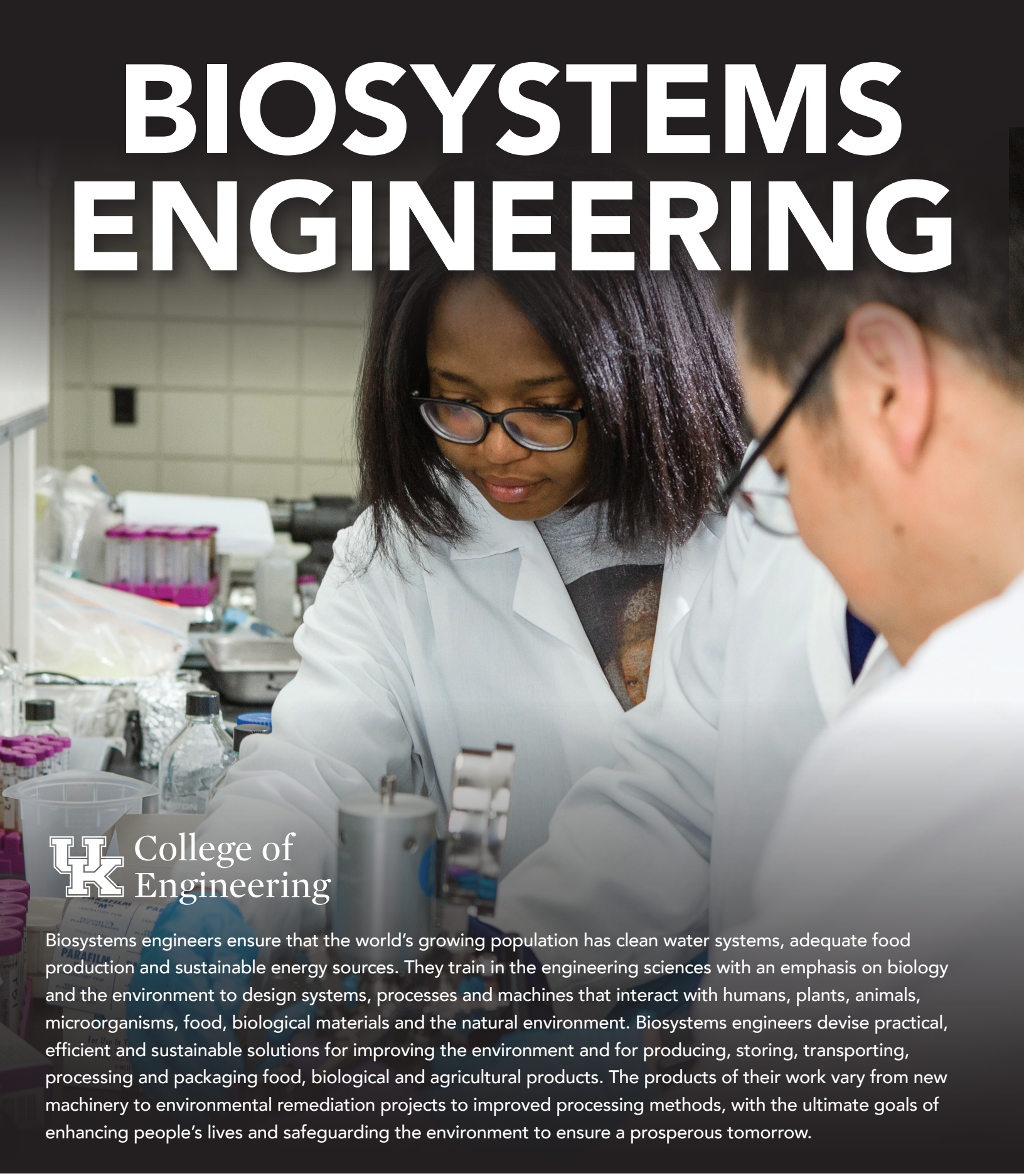
BIOSYSTEMS ENGINEERING



College of Engineering

Biosystems engineers ensure that the world's growing population has clean water systems, adequate food production and sustainable energy sources. They train in the engineering sciences with an emphasis on biology and the environment to design systems, processes and machines that interact with humans, plants, animals, microorganisms, food, biological materials and the natural environment. Biosystems engineers devise practical, efficient and sustainable solutions for improving the environment and for producing, storing, transporting, processing and packaging food, biological and agricultural products. The products of their work vary from new machinery to environmental remediation projects to improved processing methods, with the ultimate goals of enhancing people's lives and safeguarding the environment to ensure a prosperous tomorrow.

FOR MORE INFORMATION, VISIT THESE WEBSITES:

Biosystems Engineering: www.engr.uky.edu/bae

College of Engineering: www.engr.uky.edu

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

University of Kentucky: www.uky.edu

Admissions: www.uky.edu/admissions

Scholarships: www.uky.edu/scholarships

Biosystems Engineering Curriculum Sample

This is a sample list of classes that a student will take to pursue a degree in biosystems engineering. As part of the biosystems engineering 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 biosystems 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
Composition & Communication I and II	6
Chemistry I and Physics I and Lab	9
UK Core Course	3
Total hours	**31**

Sophomore Year

Principles of Biosystems Engineering	3
Introductory Biology I	3
Calculus III and IV	7
Chemistry II	3
Physics II and Lab	5
Computer Graphics and Communications	3
Statistical Inferences	3
Thermodynamics	3
Statics	3
Total hours	**33**

Junior Year

Economic Analysis for Biosystems	2
Fluid Mechanics	3
Electrical Circuits and Electronics	3
Mechanics of Deformable Solids	3
Principles of Biology II	3
Technical Writing	3
Heat and Mass Transfer	3
DC Circuits and Microelectronics	3
Dynamics	3
Biosystems Core Elective	3
UK Core Courses	6
Total hours	**35**

Senior Year

Biosystems Engineering Design I and II	4
Senior Seminar	1
Modeling of Biological Systems	3
BAE Core Electives	6
Technical Electives	9
Biological Science Elective	3
UK Core Course	3
Total hours	**29**

Pursuing Biosystems Engineering at UK

The University of Kentucky is the only college in Kentucky that offers biosystems engineering. Biosystems engineering has historical roots in agricultural engineering, which is typically a part of each state's land grant university. Plus, the biosystems engineering program at UK includes more specialty areas than similar departments across the country. This flexibility in the curriculum allows for each student to customize their technical electives to their future career goals.

Career Prospects in Biosystems Engineering

With six career specializations, biosystems engineering students have the opportunity to customize their engineering future.

Graduates have the opportunity to establish dynamic careers in industry and government. Students have been hired by many industries, such as USDA, Alltech, Chiquita, Nestle, Kuerig, Yum! Foods, Duke Energy, UPS, Trane, Cummins, John Deere, Honeywell, Altec, and Big Ass Solutions.

Students also choose pre-professional paths that prepare them for medical and veterinary programs. Other students continue with graduate studies, earning masters, Ph.D., or MBA degrees.

Undergraduate Research in Biosystems Engineering

Nearly every professor who teaches biosystems engineering courses welcomes undergraduate students into their laboratories. Students have worked on "the farm of the future," drone use for atmospheric and agricultural purposes, hybrid and electric powertrains, watershed-scale water quality assessment of natural and managed ecosystems and much more. Because we have varied areas of study, students are sure to find a laboratory that combines their research interests and skill level.

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

Revised August 2019. 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

Department of Biosystems and Agricultural Engineering
128 C.E. Barnhart Building
Lexington, KY 40546-0276
(859) 257-3000
www.engr.uky.edu/bae