



# BIOSYSTEMS ENGINEERING

Biosystems engineers ensure that the world's growing population has clean water systems, adequate food production and sustainable energy sources. They apply engineering principles and practices to the fields of biology and environmental science to design systems, processes and machines that interact with humans, plants, animals, microorganisms, food, biological materials and the natural environment. 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.

## 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. The biosystems engineering program also 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 organizations, such as USDA, Alltech, Chiquita, Nestle, Kuerig, Yum! Foods, Duke Energy, UPS, Trane, Cummins, John Deere, Honeywell, Altec, LinkBelt, Stantec, and Hazen and Sawyer. Students can also choose pre-professional paths that prepare them for medical and veterinary programs.

## UNDERGRADUATE RESEARCH IN BIOSYSTEMS ENGINEERING

Students have investigated research questions related to "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 matches their research interests and skill level.

## CO-OPS

UK provides opportunities to co-op with many companies. Students can co-op during the fall, spring or summer terms. Those who complete three co-op rotations will receive formal recognition upon graduation with a special cord (beginning with May '23 graduates). Students work with the co-op director and their academic advisor to determine the best timing for their co-op experiences.

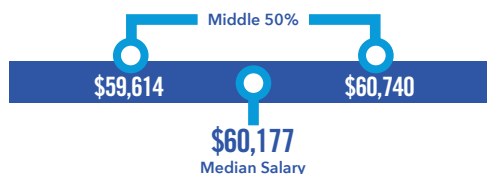
## PROGRAM FACTS

**Common Minors:** Biomedical Engineering, Dance, Mathematics and Spanish

**Student Organizations:** Alpha Epsilon, Biosystems and Agricultural Engineering Student Branch, Water Professionals, and Wildcat Pulling Team

## GRADUATE STARTING SALARIES

Median full-time starting salary info for 2021 new college graduates  
National Association of Colleges and Employers - Summer 2022



## INDUSTRY SECTORS:

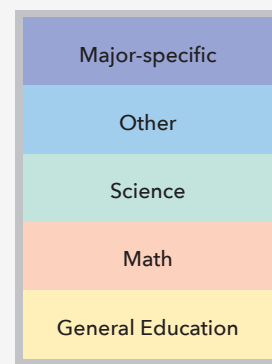
- Environmental Engineer
- Firmware Engineer
- Research & Development Engineer
- Quality Assurance Manager
- Stormwater Director
- Site Engineer
- Biopharma Scientist

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## Curriculum Synopsis

This list is a synopsis 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 synopsis represents one of several paths to a biosystems engineering degree. Consult the departmental website for details on specific paths.*



YEAR ONE	YEAR TWO	YEAR THREE	YEAR FOUR
Engineering Exploration I and II	Principles of Biosystems Engineering	BAE Core Elective	Biosystems Engineering Design I and II
Fundamentals of Engineering Computing	Computer Graphics and Communication	DC Circuits and Microelectronics	Two BAE Core Electives
Chemistry I	Engineering Thermodynamics I	Economic Analysis of Biosystems	Modeling of Biological Systems
Physics I and Lab	Statics	Heat and Mass Transfer	Senior Seminar
Calculus I and II	Chemistry II	Dynamics	Three Technical Electives
Composition and Communication I and II	Introductory Biology I	Electrical Circuits and Electronics	Biological Science Elective
UK Core Course	Physics II and Lab	Fluid Mechanics	UK Core Course
	Calculus III and IV	Mechanics of Deformable Solids	
	Probability and Statistics for Biosystems	Introductory Biology II	
		Technical Writing	
		UK Core Courses	

**TAKING CO-OPS?**  
When you participate in semester co-ops, the above schedule can adjust.

Detailed Curriculum Information: [enr.uky.edu/explore/biosystems-engineering](http://enr.uky.edu/explore/biosystems-engineering)

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

**Revised August 2022.** Information subject to change. For the most up-to-date information on the UK College of Engineering, visit [www.enr.uky.edu](http://www.enr.uky.edu).