BIOSYSTEMS ENGINEERING

WHAT IS BIOSYSTEMS ENGINEERING?
The study of biosystems engineering merges engineering and agricultural science to improve our quality of life while maintaining the environment and preserving our natural resources.

Biosystems engineers work at the interface of biology and technology to address problems and opportunities related to food, water, energy and the environment – all of which are critical to the future of our growing society. They improve systems for efficient and effective production, processing, storage and handling of food, feed, fiber and many other biological products.

WHY STUDY BIOSYSTEMS ENGINEERING?
With a growing population and increased pressure on our natural resources, new technologies and approaches are needed. A high demand for biosystems engineering professionals equates to an opportunity for you to start a rewarding career while solving some of the greatest issues that face our society today.

FINISH IN 4
For each undergraduate degree program in CASNR, we have prepared example plans of how you may successfully complete your degree plan in four years.

Admitted students intending to enroll in the biosystems engineering major must meet additional academic requirements. Learn more at casnr.okstate.edu/bae.

Where Do You See Yourself?
- Combustion engineer
- Consultant engineer
- Design and application engineer
- Development engineer
- Environmental agency advisor
- Field test engineer
- Food processing consultant
- Machine systems design engineer
- Manufacturing engineer
- Pipeline integrity engineer
- Processing plant manager
- Water resources engineer

MONTANA WELLS
Washington, Oklahoma

“We are applying new technologies and new methods within agricultural systems, whether it’s animal systems or food processing systems or even preserving our natural resources through sustainable development. We are on the leading edge of fixing the problems we face in the world when it comes to food, fiber and energy.”
Major Options

Within biosystems engineering, you have the option to select a predefined emphasis area and work with your faculty advisor to customize your plan of study.

**BIOPROCESSING AND FOOD PROCESSING**
Bioprocessing is the merging of engineering and biological sciences. Graduates can work in alternative fuels, pharmaceuticals and nutraceuticals and the development of industrial products. Food processing involves the design of processes and equipment to produce foods and other value-added products. Graduates work in product development and testing, food safety and quality, packaging, storage and handling, and system optimization.

**ENVIRONMENTAL AND NATURAL RESOURCES**
This option uses engineering and technology for evaluation and improvement of natural resource systems and environmental sustainability. Graduates can go into areas such as hydrology, storm water management, erosion control, and soil and water protection.

**MACHINE SYSTEMS AND AGRICULTURAL ENGINEERING**
This option focuses on the analysis and design of machines that interact with biological materials including soil, plants and animals. Graduates may be involved in off-road equipment design, sensors and control systems, design of intelligent machines or precision agriculture.

**PRE-MEDICAL**
For students considering entry into health professions, the math and science curriculum helps meet entrance requirements for medical schools while also preparing students for a career involving biosystems engineering. This option also is applicable for students interested in graduate study in biomedical or health related research areas.

**OKLAHOMA STATE UNIVERSITY**
College of Agricultural Sciences and Natural Resources

Department of Biosystems and Agricultural Engineering

Biosystems Engineering Major

**FAST FACT**
Freshmen and transfer biosystems engineering students design a portion of the capstone senior design project.

**HIGHLIGHT**
Students nearing completion of their undergraduate work participate in a design course spanning two semesters. The outcome of this course is a finished design that is presented in a professional manner to their corporate sponsor.