



# BIOSYSTEMS & AGRICULTURAL ENGINEERING

what is your next **STEP?**

## biosystems and ag engineering

The Department of Biosystems and Agricultural Engineering is administered jointly by the College of Agricultural Sciences and Natural Resources and the College of Engineering, Architecture and Technology. Biosystems engineers are professionals who create and adapt engineering knowledge and technologies for the efficient and effective production, processing, storage, handling and distribution of food, feed, fiber and other biological products, while at the same time providing for a quality environment and preserving and protecting natural resources.

Biosystems Engineering courses integrate engineering sciences, physical sciences and biological sciences and teach students to address real-world challenges. Under the guidance of experienced faculty, students work both as individuals and in teams to design creative solutions to complex problems. The program culminates in senior-year design courses in which students integrate the analysis, synthesis and other abilities they have developed throughout the earlier portions of their study into a capstone experience.

## study options

The bachelor's of science in Biosystems Engineering is offered with four options: Biomechanical, Bioprocessing & Biotechnology, Environment & Natural Resources and Food Processing. These options allow a degree of specialization not commonly found in other engineering programs.

### Biomechanical Option

The Biomechanical option integrates biology into the design of machines and mechanisms that directly interact with biological materials, including soil, plants and animals. Off-road equipment design, sensor/control systems development, intelligent machine design, precision agriculture and systems engineering are a few areas that utilize biomechanical engineers.

### Bioprocessing & Biotechnology Option

The Bioprocessing and Biotechnology option emphasizes the engineering aspects of biochemical processes. Students learn how to utilize ideas from both the life and physical science disciplines and may choose a career path bringing laboratory-scale research involving plant systems, mammalian systems, bio-environmental systems or industrial biological processes into commercial production.

### Environment & Natural Resources Option

The Environment and Natural Resources option unites concepts from engineering and biology in the design and analysis of systems that protect and sustain the quantity and quality of water, soil and other natural resources. Hydrology, storm water management, environmental protection, environmental remediation, water quality, erosion control, water treatment systems, irrigation and water resources production/development are examples of career pursuits.

### Food Processing Option

The Food Processing option involves the design of processes, products and equipment used in the production of food, feed, fiber, pharmaceuticals and other biomaterials. Practical applications can involve all aspects of processing, including: packaging, storage, preservation, energy utilization and environmental protection.

## for more information

Department of Biosystems and Agricultural Engineering  
111 Agricultural Hall  
Stillwater, OK 74078  
(405) 744-5431  
<http://biosystems.okstate.edu>

Check us out on the Web at [www.casnr.com](http://www.casnr.com)

destination **CASNR**



# roads TRAVELED



Biosystems and Agricultural Engineering Alumni Profile:

## Name:

Jake Holloway  
Tulsa, Okla.

## Current Occupation:

Engineer

## Jake's Story:

Did you know Tulsa, Okla., is headquarters to a global company? Jake Holloway, Biosystems and Agricultural Engineering alumnus, has known that since he began working with FW Murphy in early 2003.

FW Murphy, a manufacturing and engineering company, also has production and sales facilities in Texas, England and Mexico, with sales offices in France and Australia.

What I like most about my job is that I get to use different disciplines. I'm always challenging myself to try something new."

- Jake Holloway  
CASNR Graduate

Jake heard about his current position from a professor in his department and submitted his résumé for the product engineer position. Once hired, Jake settled into his daily responsibilities.

The company manufactures controls and instrumentation for oil and gas production, irrigation and agriculture, and pleasure boats,

to name a few. Jake ensures the quality of the products by supervising the production line and developing new products.

Jake said students interested in a position like his should have strong mechanical background and hands-on experience. Good communication skills are also necessary because he deals with management, other engineers and the assembly crew. Jake also recommends getting involved in school activities that provide valuable skills and hands-on experiences.

If the project you're working on is pointing to a position like Jake's, try a major in Biosystems and Agricultural Engineering.

## which PATH are you taking?

Careers for Biosystems and Agricultural Engineering Graduates:

- Food Engineer
- Machine Design Engineer
- Bioprocessing Engineer
- Structural Engineer
- Irrigation Engineer
- Sanitary/Waste Handling Engineer
- Consultant
- Technical Sales
- Product Manager
- Project Engineer
- Plant Supervisor
- Facilities Engineer
- Sales or Service Representative

Oklahoma State University  
<http://www.okstate.edu>



Oklahoma State University, in compliance with Title VI and VII of the Civil Rights Act of 1964, Executive Order 11246 as amended, Title IX of the Education Amendments of 1972, Americans with Disabilities Act of 1990, and other federal laws and regulations, does not discriminate on the basis of race, color, national origin, sex, age, religion, disability, or status as a veteran in any of its policies, practices or procedures. This includes but is not limited to admissions, employment, financial aid, and educational services.

This publication is printed and issued by Oklahoma State University as authorized by the Dean of the Division of Agricultural Sciences and Natural Resources and has been printed at a cost of \$942.18 for 2500 copies. 0805 # RKB.

## MILE MARKERS

Enrollment:

- 95 Students

Study Options:

- Biomechanical
- Bioprocessing and Biotechnology
- Environment and Natural Resources
- Food Processing

Student Organizations:

- American Society of Agricultural Engineers
- Cowboy Motorsports

Award Winning Students:

- Cowboy Motorsports team won the 2003-2004 and the 2004-2005 ASAE International 1/4-Scale Tractor Student Design Competitions

For More Information:

- [www.casnr.com](http://www.casnr.com)