

# Biosystems Engineering

## WHAT IS BIOSYSTEMS ENGINEERING?

Biosystems engineers ensure that we have the necessities of life: a safe and plentiful supply of food and fiber, clean water to drink, renewable fuels and alternative energy sources and a safe and healthy environment. Auburn biosystems engineering graduates apply engineering to the challenges and opportunities presented by living ecosystems and the natural environment.

Auburn University's Department of Biosystems Engineering, one of nine departments in the Samuel Ginn College of Engineering, boasts the only biosystems, forest and ecological engineering curricula in Alabama. Since its beginning in 1919, the department has been providing engineering solutions to advance the economic and environmental well-being of Alabama's citizens, as well as those around the world. With dynamic growth of faculty and students, the department will continue to serve the state well beyond the 21st century.

## NOTABLE

- 181 undergraduate and 30 graduate students enrolled in fall 2016
- 15 full-time faculty members
- Multi-million dollar renovation to Biological Engineering Research Laboratory

## CURRICULUM

**Bachelor of Biosystems Engineering**

**Bachelor of Biosystems Engineering  
– Forest Engineering option**

**Bachelor of Biosystems Engineering  
– Ecological Engineering option**

### **Biosystems Engineering**

The biosystems engineering program offers students a strong foundation in biology, mathematics, physics, chemistry and engineering to solve problems in the production, processing and distribution of biological materials, as well as the protection and enhancement of the environment. Areas of study include:

- Bioenergy and bioproducts engineering
- Food safety engineering
- Water resources engineering
- Biological waste management

### **Forest Engineering**

The forest engineering option provides students with engineering fundamentals and focuses that knowledge on one of our most important resources — our forests. Students complete a summer field practicum after the sophomore year. Upper-level topics include:

- GPS, GIS and precision forestry
- Structural wood engineering
- Forest operations engineering
- Off-highway vehicle engineering

### **Ecological Engineering**

The ecological engineering option provides students with the engineering fundamentals needed to solve environmental problems using knowledge of natural ecological and biological principles.

Areas of study include:

- Watershed modeling
- Natural resource conservation
- Non-point source pollution
- Stream and river restoration

For information about academic programs and minors, visit [www.eng.auburn.edu/programs](http://www.eng.auburn.edu/programs)

### **Graduate curriculum**

Graduate study in the Department of Biosystems Engineering may lead to the Master of Science (M.S.) or Doctor of Philosophy (Ph.D.) At the graduate level, students can specialize in the following: Bioenergy and Bioproducts Engineering, Precision Agriculture and Forestry, Off-Highway Vehicle Engineering, Ecological Engineering, Water Resources and Climate Change or Food and Process Engineering.

## SCHOLARSHIPS

The College of Engineering and the Department of Biosystems Engineering provide scholarship opportunities to students at every stage of their academic career. To be eligible for scholarships at Auburn University, all students must apply through the AUSOM system.

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# RESEARCH, LABORATORIES AND CENTERS

Biosystems engineering provides its students with opportunities for research in many different areas within the field. Broad faculty expertise, combined with the department's quality teaching and state-of-the-art equipment, ensures that students obtain a thorough understanding of biosystems engineering. Research facilities include:

- Advanced Biological Systems Laboratory
- Bioanalytical Laboratory
- Biosystems Automation Laboratory
- Biomaterials Characterization Laboratory
- Biomaterials Processing and Conversion Laboratory
- Center for Advanced Science, Innovation, and Commerce
- Center for Bioenergy and Bioproducts
- Chemical Analysis Laboratory
- Computing Laboratory
- Food Engineering Laboratory
- Hydraulics Laboratory
- National Poultry Technology Center
- Sensors and Controls Laboratory
- Soil and Water Laboratory
- Water Resources Center

# TEAMS AND ORGANIZATIONS

Auburn Engineering students can participate in a variety of activities beyond the classroom, gaining experience with teamwork and project management. Along with various engineering-focused student competition teams, such as the War Eagle Pullers Quarter-Scale Tractor Design Competition, biosystems engineering students are encouraged to participate in campus organizations, such as:

- Alpha Epsilon honor society
- American Society of Agricultural and Biological Engineers
- Baja SAE
- Cupola Engineering Ambassadors
- Engineering Student Council
- Engineers Without Borders
- Formula SAE
- National Society of Black Engineers
- Quarter-Scale Tractor
- Society of Hispanic Engineers
- Society of Women Engineers

For more information, visit

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# LIFE AFTER GRADUATION

Graduates in biosystems engineering are well equipped to use their expertise in many areas that affect our quality of life and environment. They are sought by industry, government and public service organizations for their ability to apply engineering fundamentals to biological systems and to the management of land and water resources.

Biosystems engineering careers include design engineers, sales engineers, project managers, engineering managers and research and development engineers.

# CONTACT US

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