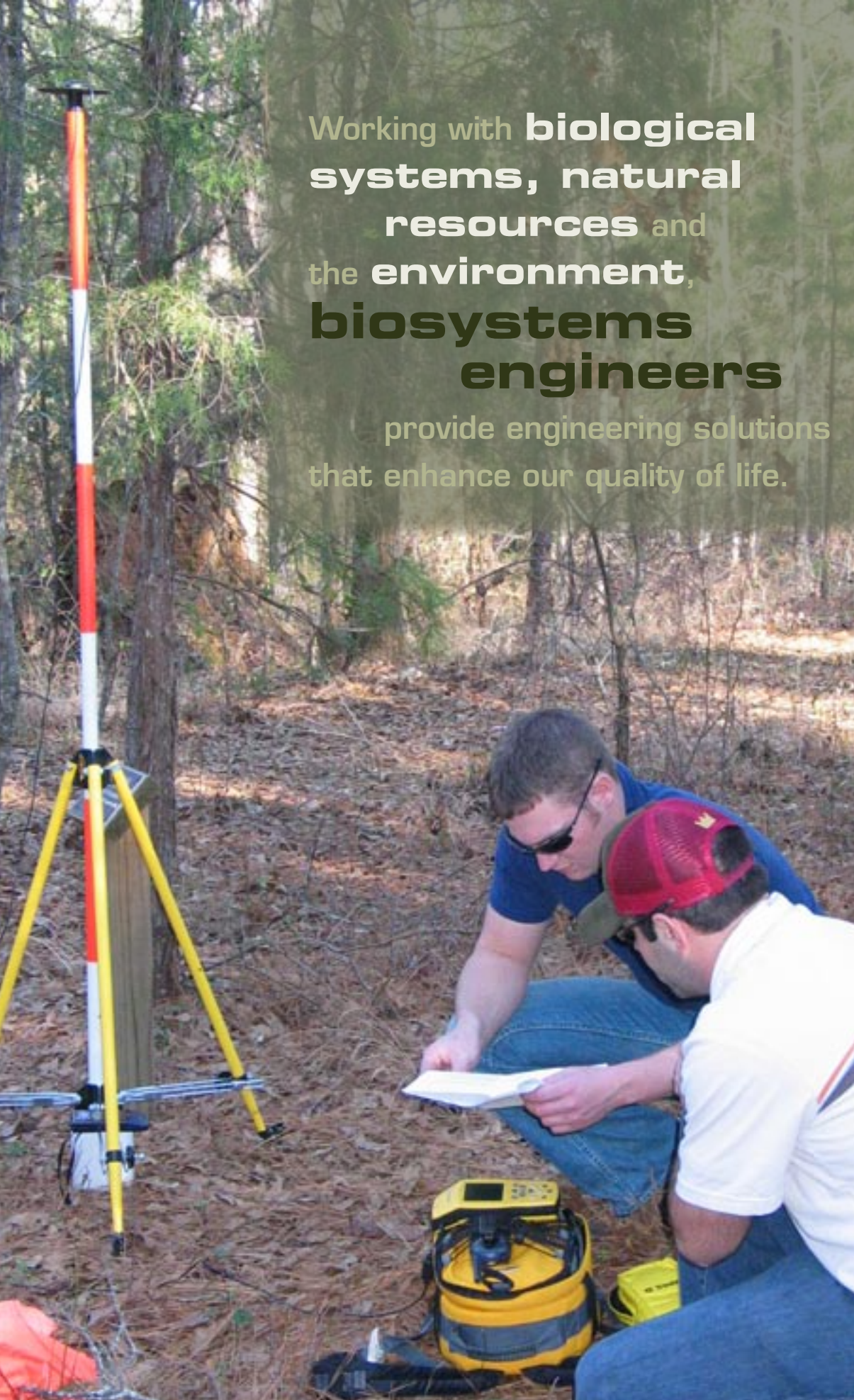


Working with **biological systems, natural resources** and the **environment, biosystems engineers** provide engineering solutions that enhance our quality of life.



## Scholarships/Financial Assistance

Loan and grant opportunities are available, including:

- Pell grants
- Guaranteed student loans
- Research internships with professors
- Birdsong study abroad scholarships
- Departmental scholarships for biosystems engineering students

As students progress, the number of available scholarships and grants increases. Although some consideration is given to financial need, most scholarship awards are based on academic achievement.

[www.auburn.edu/student\\_info/student\\_affairs/finaid](http://www.auburn.edu/student_info/student_affairs/finaid)

## The Auburn Advantage

Solid academics and a strong sense of belonging make Auburn a special place. Our alumni recall a friendly, safe campus with a sense of family, caring professors, academic variety and challenge, and extracurricular activities that helped them grow into leaders.

- Outstanding instruction
- Hands-on lab projects
- Research opportunities
- Co-op education and internships
- Scholarship opportunities
- Mentoring
- Academic support
- Diversified faculty and student body
- Job search assistance
- Variety of career opportunities
- Résumé service for alumni
- Classic college town atmosphere

## Contact Us

Steven Taylor, P.E., department head  
Department of Biosystems Engineering  
200 Tom Corley Building  
Auburn University, AL 36849  
334.844.4180  
[taylost@auburn.edu](mailto:taylost@auburn.edu)  
[www.eng.auburn.edu/bio](http://www.eng.auburn.edu/bio)

[www.auburn.edu/student\\_info](http://www.auburn.edu/student_info)



GINN COLLEGE OF  
ENGINEERING

Auburn University  
[www.auburn.edu](http://www.auburn.edu)

Auburn University is an equal opportunity educational institution/employer.  
2005-001-BIO



## At a Glance

Combining biology with engineering to meet challenges presented by living organisms and the natural environment, biosystems engineers work to ensure a safe and plentiful supply of food and fiber, clean drinking water, renewable fuel and energy sources, and a safe and healthy environment in which to live.

Biosystems engineering careers include design engineer, sales engineer, project manager, engineering manager, and research and development engineer. The starting salary range for Auburn biosystems engineers is \$40,000 to \$60,000.

## Biosystems Engineering

The Department of Biosystems Engineering at Auburn University has an 85-year history of using engineering expertise to advance the economic and environmental well-being of people in Alabama and around the world.

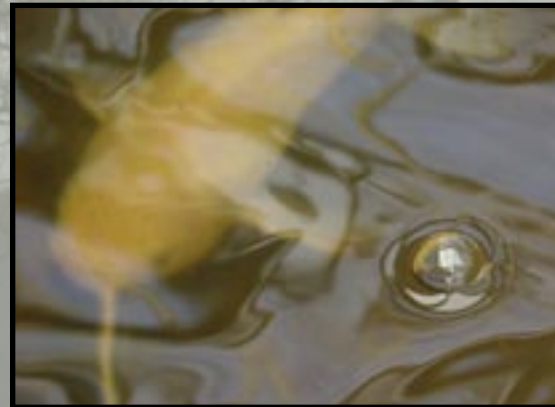
## Undergraduate Curricula

- Bachelor of Biosystems Engineering  
*(with an option in forest engineering)*

Auburn is the only university in Alabama offering curricula in biosystems engineering and forest engineering.

Major emphases in the department include:

- Biological and food engineering
- Ecological engineering
- Production and process engineering
- Off-highway vehicle engineering



## 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 food and fiber and in protecting and enhancing the environment. Areas of study include:

- Food engineering
- Ecological engineering
- Bio-process engineering
- Off-highway vehicle engineering
- Biological waste management
- Watershed management, including source water protection
- Water quantity management, including irrigation
- Geospatial technologies
- Site-specific management of natural resources

## Forest Engineering

The forest engineering option, the only one of its kind in the South, 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:

- Global positioning system (GPS), geographic information systems (GIS), and precision forestry
- Structural wood engineering
- Wood products process engineering
- Forest operations engineering
- Environmental protection
- Off-highway vehicle engineering



## Program Highlights

One of the most valuable components of the biosystems engineering curricula is the capstone design experience in which seniors apply design techniques, processes, and principles to solve real-world design problems. Recent projects include:

- Designing an environmentally-friendly equestrian trail camping facility
- Designing an energy efficient forestry plow
- Designing an aquatic resources educational center

Students who take the geospatial applications course learn to collect, manage, and analyze GPS and GIS data for biosystems through exercises such as:

- Studying geospatial variation in water quality in Hospilika Creek
- Mapping pollution sources in Moore's Mill Creek
- Optimizing the Auburn University transit system routes
- Improving coverage of lighting on the Auburn campus
- Measuring geospatial variation in soil nutrients



## Research and Outreach Areas

Through our comprehensive research and outreach efforts, the Department of Biosystems Engineering applies the principles of engineering to:

- Develop processing systems that add value to, and improve the safety and increase the shelf life of, food and biological materials
- Develop efficient energy systems from renewable sources
- Evaluate and manage land use change in watersheds to control nonpoint source pollution and to protect source water supplies
- Reduce soil erosion and pollutant loads to water resources from agricultural, forest, construction, and recreational activities
- Reduce pollution from land application of agricultural wastes
- Understand fundamental hydrologic processes controlling transport of contaminants to surface water and groundwater
- Develop sensors and geospatial data systems for precision operations in agriculture and forestry
- Improve safety and performance of off-highway vehicles
- Develop engineering advances for poultry production facilities
- Manage biological waste products
- Deploy GPS and GIS to manage community resources
- Design systems to provide safer, cleaner drinking water for Alabama communities as well as rural villages in developing countries
- Evaluate more efficient water management and irrigation techniques, including off-stream storage and subsurface drip irrigation
- Predict rollover behavior of forest machines
- Improve thrown object protection for forest machine operator enclosures



## Laboratory Facilities

Our instructional and research facilities provide students with the hands-on experience necessary for a practical and comprehensive education in biosystems engineering.

- Computing Laboratory
- Geographic Information Systems Laboratory
- GPS Laboratory
- Electrical Systems Laboratory
- Soil and Water Laboratory
- Hydraulics Laboratory
- Forest Engineering Laboratory
- Power Hydraulics Laboratory
- Precision Agriculture/Precision Forestry Laboratory
- Food and Bioprocess Engineering Laboratories



## Extracurricular Opportunities

Auburn Engineering students can participate in a wide variety of educational activities beyond the classroom, gaining experience with teamwork and project management. In the American Society of Agricultural Engineers 1/4-Scale Tractor Design Competition, the Auburn University War Eagle Pullers design and construct a 1/4-scale tractor using a standard engine and tires. The 2004 team placed second in the two-wheel drive category, third in maneuverability, 16th in tractor pull and 19th overall out of 30 teams from across the nation.

Biosystems engineering students are encouraged to participate in campus chapters such as:

- American Society of Agricultural Engineers
- Society of American Foresters
- Society of Women Engineers
- National Society of Black Engineers

[www.eng.auburn.edu/organizations](http://www.eng.auburn.edu/organizations)



## Advising/Support Services

To ensure progress toward completion of degree requirements, an engineering advisor and department undergraduate program officer are available to discuss and advise on curriculum choices and requirements. In addition, each student is assigned to a biosystems engineering faculty member for close academic advisement, consultation, personal guidance, and professional advice. Biosystems engineering has a diverse, student-focused faculty with a wide range of industry and government experience.

Auburn Engineering is committed to helping students succeed. The following services are available at no cost:

- Study Partners mentoring program
- MentorNet e-mentoring network
- College of Engineering tutoring program
- BellSouth Minority Engineering Program tutors

