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**IDEAS**  
INTO **REALITY,**

MECHANICAL ENGINEERS  
PROVIDE THE RESEARCH,  
INNOVATION AND  
TECHNOLOGICAL ACHIEVEMENTS  
THAT SPUR THE ECONOMY.



## The Auburn Advantage

Solid academics and a campus with a strong sense of place make Auburn special. 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.

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

## Contact Us

Undergraduate Program Officer  
Department of Mechanical Engineering  
201 Ross Hall  
Auburn University, AL 36849  
334.844.3309  
me\_advisor@eng.auburn.edu  
www.eng.auburn.edu/me

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



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# MECHANICAL ENGINEERING



WWW.ENG.AUBURN.EDU

AUBURN UNIVERSITY

## At a Glance

Mechanical engineers are involved in the conceptualizing, design, manufacture, testing, marketing and maintenance of everything from jet aircraft to automobiles, power plants to hydroelectric dams, and computers to robots. Job opportunities exist in areas including business, public utilities, teaching, the armed services, the space program, and industries such as power, chemical, petroleum, automotive, biomedical, pharmaceutical, food, textile, computer, metal casting, electronics, paper, wood, rubber and glass.

## Mechanical Engineering

Auburn University's Department of Mechanical Engineering, one of nine departments in the Samuel Ginn College of Engineering, was established in 1885. More than a century later, 6,500 students have received degrees. We graduate more mechanical engineers than all other engineering schools in the state combined, ranking 27th nationally in the number of undergraduate degrees awarded.

The department consists of two undergraduate programs: mechanical engineering and materials engineering. The mechanical engineering program includes four general areas of interest:

- Dynamics and systems—interaction, motion, vibration and design of multi-component systems of solid structures
- Mechanics—deformations of solid and liquid substances under static and dynamic loads so their behavior, including failure, can be modeled for the design of components and systems
- Design and manufacturing—selection, analysis, implementation, design and production of mechanical components and systems found in vehicles, machinery, consumer products and the manufacturing environment
- Thermal sciences—conversion of heat and mechanical power, conversion machines, power systems, combustion, and air-conditioning systems

The materials engineering program offers courses on the thermal and mechanical behavior of materials ranging from pure metals to alloys and plastics to state-of-the-art composites.

## Curriculum

- Bachelor of Mechanical Engineering (*with specializations available in automotive engineering and pulp and paper engineering*)
- Bachelor of Materials Engineering

The curriculum emphasizes fundamental engineering sciences with a strong foundation in mathematics. At the senior level, students can specialize through a sequence of technical electives in areas such as vibration and control, heating, ventilation and air conditioning, mechatronics, vehicle dynamics, vehicle design, sensors, and thermal management of electronics. The senior design project consists of student teams developing industry-sponsored design solutions to real-world engineering problems.



## Research Areas

The department's teaching resources are complemented by nationally recognized research activities. Research sponsors include the National Science Foundation (NSF), the National Aeronautics and Space Administration (NASA), the U.S. Army Research Office, the Air Force Office of Scientific Research (AFOSR), the Office of Naval Research (ONR) and a variety of industrial sponsors such as the Semiconductor Research Corporation (SRC). Research is performed in areas such as dynamic systems, materials, mechanics, sound and vibration, and thermal systems.

## Laboratory Facilities

Our research facilities offer students an opportunity to develop special skills in emerging technologies:

- Dynamics of Machines Laboratory
- Vibration and Environmental Testing Laboratory
- CAD/CAM Laboratory
- Measurements Laboratory
- Mechanics of Materials Laboratory
- Fluid Mechanics Laboratory
- Sound and Vibration Laboratory
- Rotor Dynamics Research Laboratory
- Electronics Cooling Laboratory
- Machine Simulation and Analysis Laboratory

A fully equipped machine shop for welding, machining, sheet metal working and woodworking can be accessed for student projects and an electronics shop staffed by an electronics technician is available.

## Student Projects

Among the student projects available to mechanical engineering students are four cross-disciplinary undergraduate teams that design and build vehicles to compete in endurance and speed races on the regional, national and international level. The Sol of Auburn solar car team participates in cross-country races; two SAE Mini Baja all-terrain vehicle teams, including an all female team, design off-road vehicles capable of maneuvering over rough terrain and through water; and the Formula SAE team designs and builds formula race cars.

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



## Student Organizations

Mechanical engineering students are encouraged to participate in campus chapters such as the American Society of Mechanical Engineers, the Society of Automotive Engineers, Pi Tau Sigma honor society, the Materials Engineering Society, the Society of Women Engineers and the National Society of Black Engineers.

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

## Student Advising

To ensure progress toward completion of degree requirements, an engineering advisor, the department chair and a department undergraduate program officer are available for matters of curricular choice and requirements.

## Academic Support Services

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 tutors
- BellSouth Minority Engineering Program tutors

## Scholarships/ Financial Assistance

There are numerous loan and grant opportunities available, including:

- Pell grants
- Pulp and paper scholarships
- Birdsong travel abroad grants
- Guaranteed student loans
- Research internships with professors
- Departmental scholarships

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)