MECHANICAL ENGINEERING, BS

Mechanical engineering program is a versatile engineering program, and is designed for students who are interested in applying their solid backgrounds and knowledge of mathematics, science, and general engineering to design and conduct experiments; analyze and interpret data; and design systems, components, and processes to meet desired needs for a long-lasting societal impact.

Mechanical engineers pursue careers in the automotive, aerospace, chemical, computer, communication, defense, energy, railroad and robotics industries, just to name a few. Mechanical engineers are also found in almost all manufacturing industries. Increasingly, mechanical engineers are needed in the environmental and bio-medical fields, and many of our graduates have pursued education in medicine and law. Without a doubt, virtually every product or service in modern life has probably been touched in some way by a mechanical engineer!

Program Objectives

The University of Alabama Department of Mechanical Engineering has adopted the following objectives to ensure our graduates are equipped to meet known and anticipated technical challenges of our profession. Out of a commitment to continuously improve the undergraduate curriculum for the mechanical engineering program, the Department of Mechanical Engineering’s faculty has adopted several educational objectives. The following objectives define the early-career accomplishments that the mechanical engineering program is designed to prepare graduates to pursue:

- Our graduates will be expected to follow one of two career paths: technical or management. We expect them to have sufficient career and professional accomplishments within 5-10 years of graduation to be considered as either an engineering expert or a leader/manager.
- Our graduates will continue to grow in expertise and knowledge by participating in activities that enhance professional development in their career path.
- Our graduates will contribute to the profession in ways that benefit society.

Student Outcomes

The mechanical engineering program at The University of Alabama will demonstrate that its graduates have:

1. an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
2. an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
3. an ability to communicate effectively with a range of audiences
4. an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
5. an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
6. an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions

7. an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.
Footnotes

1. All engineering students are required to take 9 hours of humanities and 9 hours of social and behavioral sciences. At least 6 hours must be from a single program.

2. Approved science electives are taken from an approved list available from the department.

3. Mechanical engineering electives are offered on a regular schedule, but not necessarily every year. The student may select any two mechanical engineering electives to complete the requirements for the BS degree. A list of mechanical engineering electives is available from the department.

4. The technical elective requirement may be fulfilled with a mechanical engineering elective course or an engineering, math, or science course from the approved list or with advanced petition to the mechanical engineering department. The approved list is available from the department.

Interim Term Courses

Humanities and social science courses taken during the Interim term may be counted toward the requirements for a BS degree in mechanical engineering. However, interim courses can be used to fulfill mechanical engineering or technical elective requirements only if the specific courses have been approved in advance of registration by the department of mechanical engineering.

Our graduates accept positions in aerospace, automotive, energy, railroad, manufacturing, food/forest products, appliances, robotics, electric power, electronics, automation, heating/air-conditioning, construction, mining, defense/military, business, law and medicine.

Types of Jobs Accepted

Entry level engineering jobs in project engineering, production supervision, product design, process design, maintenance, plant layout, technical marketing/sales, contract supervision, engineering consulting, graduate education in engineering, business, law, medicine and dentistry.

Jobs of Experienced Alumni

Positions in project leadership, plant management, R&D management, contractors, technical sales/marketing executives, entrepreneurs, consulting ‘rm executives/owners, corporate executives/managers/owners, business management, physicians, attorneys, dentists, military officers, college faculty, and federal/industrial researchers.

Learn more about opportunities in this field at the Career Center

Faculty

Professors

Jalili, Nader, Department Head

Agrawal, Ajay K.

Balasubramanian, Bharat

Krishnan, Sundar Rajan

Shen, Xiangrong

Shepard Jr., W. Steve

Srinivasan, Kalyan Kumar

Associate professors

Amini, Shahriar (Sean)

Ashford, Marcus D.

Bittle, Joshua A.

Fonseca, Daniel J.

Khandelwal, Bhupendra

Mahmoodi, S. Nima

Momeni, Kasra

Puzinauskas, Paulius V.

Todd, Beth Ann

Volkov, Alexey N.

Williams, Keith A.

Yoon, Hwan-Sik

Assistant professors

Carpenter, Joseph

Cousin, Christian A.

Davami, Keivan

Kasemer, Matthew

Kim, Hyun Jin

Martelli, Dario

Pakniyat, Ali

Patiballa, Sree Kalyan

Samadi, Forooza

Shah, Krishna

Vikas, Vishesh

Instructors

Hill, Lawrence

Koutahzadeh, Negin

Scott, Radley

Adjunct professor

Daniewicz, Steve

Adjunct assistant professor

Rasoulzadeh, Mojdeh

Professor emeritus

Woodbury, Keith A.