MECHANICAL ENGINEERING

Faculty: Professors: Fakheri, Nair, Ryu; Associate Professors: Henderson (Chair), Kim, Timpe; Assistant Professors: Amoafo-Yeboah, Rudy; Associate Professor in Residence DeCroix; Emeritus Professors Abou-Hanna, Hurt, Johnson, Mehta, Morris, Okamura, Wessler, Zietlow; Emeritus Associate Professors: Deller, Podlasek, Reyer.

The baccalaureate program in mechanical engineering is accredited by the Engineering Accreditation Commission of ABET, https://www.abet.org.

The department offers an undergraduate degree program in Mechanical Engineering (BS-ME) and has four undergraduate ME concentrations in Biomedical, Chemical Engineering, Energy, and Robotics/Autonomous Vehicles. See the Graduate Catalog for information about our MS-ME graduate program.

Mechanical engineering is the broadest and most versatile of the engineering professions. Mechanical engineers are particularly concerned with the application of science and technology to translate ideas and theories into realistic engineering solutions that satisfy the needs of society, by using a combination of human, material, and economic resources. The broad discipline of mechanical engineering can be organized into two main branches, namely mechanical systems and thermal systems.

- Within mechanical systems, the following specialties may be pursued: applied mechanics, dynamic and control systems including robotics, materials, nanotechnology, and micro-electromechanical systems (MEMS).
- Within thermal systems, the following specialties may be pursued: energy systems, including aerospace, diesel and gasoline engine power, gas turbines, and solar energy, fluid dynamics, heat transfer, and air pollution control.
- Spanning both branches are the following specialties: bioengineering and computer and microprocessor applications

The undergraduate program also offers a broad technical background for persons wishing to enter graduate programs in different areas of mechanical engineering, business, law and medicine.

The faculty believes that engineers must be firmly grounded in the fundamentals of their field and the supporting areas of mathematics, communication, and the sciences, so that graduates will be able to adapt quickly to the rapid changes occurring in our technological society. Therefore, the curriculum has been designed to stress the basic tools of knowledge and practice essential to launch one's professional career and a lifelong process of continued learning.

The spectrum of mechanical engineering includes innovation and creation, research, design and synthesis, analysis, development, evaluation, production, and the marketing of machines, systems, and processes. Central to this activity is the design process which leads to the creation of solutions to real-world problems. Therefore, the mechanical engineering curriculum integrates design experiences into all levels of the program and into a majority of the technical electives. This culminates in a required comprehensive experience which is satisfied by a yearlong senior project and by the selection of technical.

- Mechanical Engineering (BSME)

Concentrations

The following concentrations replace the 15-16 hours of approved technical electives in the Mechanical Engineering Major. See the major site for other requirements.

- Mechanical Engineering - Biomedical Concentration (BSME)
- Mechanical Engineering - Chemical Engineering Concentration (BSME)
- Mechanical Engineering - Energy Concentration (BSME)
- Mechanical Engineering - Robotics and Autonomous Vehicles Concentration (BSME)