

MECHANICAL ENGINEERING

Mechanical engineers design the future! Mechanical engineering touches nearly every aspect of our lives. Mechanical engineers apply their expertise to the design, development and production of everything from rocket propulsion systems to appliances. Some examples of products and processes developed by mechanical engineers include engines and control systems for automobiles and aircraft, electric power generation plants, lifesaving medical devices, robots and consumer products such as air conditioners, refrigerators and washing machines. Professionals in the industry use mathematics, computers, sophisticated modeling and analysis to solve problems associated with energy usage, propulsion, power generation, sound and vibration, machinery design and manufacturing. In short, mechanical engineers play a part in designing and building the mechanical devices and systems that are essential to our everyday lives.

Pursuing Mechanical Engineering at UK

The Department of Mechanical Engineering has a proud heritage at the University of Kentucky. The first dean of the College of Engineering, F. Paul Anderson, was an early pioneer in the field of air conditioning, and UK mechanical engineering graduate Margaret Ingels was the first woman to receive a graduate engineering degree in the United States. Our graduates include two former governors of Kentucky and three members of the National Academy of Engineering. Today, the Department of Mechanical Engineering continues to prepare students for financially lucrative, high-demand professions or for furthering their education through acceptance to prominent graduate schools. Through a challenging curriculum of undergraduate study, collaboration with renowned businesses and technology centers and research options within the college's centers and consortia, UK delivers an education designed to produce proficient, marketable graduates adept at meeting today's engineering needs.

First-Year Engineering Program

The University of Kentucky First-Year Engineering program is designed to remove as much guesswork from your major selection as possible. Instead of pushing through a major you don't like, or adding time and expense by changing majors, you can make an informed choice thanks to hands-on, team experiences that expose you to all of our engineering disciplines from the start. If you are

certain about your major, the program is still highly beneficial as it exposes you to other engineering disciplines that you will encounter in the workforce and teaches you skills that you will use throughout the remainder of your engineering curricula. If you are unsure about your major, you may enroll as "undeclared engineering" and choose your major during the second semester.

All incoming freshmen and transfer engineering students take part in the First-Year Engineering program. Freshmen students take a two-semester series which includes an overview of engineering disciplines, computer programming, computer-aided design, MATLAB, engineering design and analysis, project management, ethics in engineering, teamwork and oral and written technical communication. Transfer students complete a course series their first semester focused on similar topics. Studies have shown that students who participate in a First-Year Engineering Program are more successful in upper level engineering courses and are more inclined to graduate with an engineering degree.

Students may directly enroll as pre-engineering students in their chosen major; however, there are minimum admission requirements. Minimum freshman entry requirements are an ACT math score of 23 or a SAT math score of 570. Additionally, students must meet the university's minimum ACT/SAT reading and writing requirements to be admitted to the College of Engineering. Students not eligible to directly enroll in engineering should contact the director of recruitment at visit@engr.uky.edu for alternate pathways.

Experiential Education

Growth and learning also happen outside the classroom. They happen in research labs working alongside professors and graduate students. They happen on student design teams in capstone design courses. They happen on cooperative education rotations and internships with companies all over the country. There are also numerous education abroad programs involving international travel and study.

In addition, a substantial fraction of our students undertake co-op placements or summer internships to gain valuable experience in industries that employ mechanical engineers. The Engineering Career Development Group is your one-stop shop for assisting you

FOR MORE INFORMATION, VISIT THESE WEBSITES:

Mechanical Engineering: www.engr.uky.edu/ME

College of Engineering: www.engr.uky.edu

Visit Engineering: www.engr.uky.edu/visit

University of Kentucky: www.uky.edu

Admissions: www.uky.edu/admissions

Scholarships: www.uky.edu/scholarships

Mechanical Engineering Curriculum Sample

This is a sample list of classes a student will take to pursue a degree in mechanical engineering. As part of the mechanical engineering curriculum, students must complete the pre-engineering requirements, major requirements and general education coursework, called UK Core.

Note: This sample represents one of several paths to a College of Engineering degree. Consult the departmental websites for details on specific paths.

Freshman Year

Engineering Exploration I and II	3
Fundamentals of Engr Computing	2
Calculus I and II	8
Composition & Communication I and II	6
Chemistry I and Physics I and lab	9
UK Core course	3
Total hours	31

Sophomore Year

Calculus III and IV	7
Physics II and lab	5
Chemistry II	3
Computer Aided Engineering Graphics	3
Statics	3
Manufacturing Engineering	3
Thermodynamics I	3
Dynamics	3
UK Core courses	6
Total hours	36

Junior Year

Mechanics of Deformable Solids	3
Electrical Circuits and Electronics	3
Fluid Mechanics	3
Intro to Mechanical Systems	3
Technical Writing	3
Engineering Experimentation I	3
Thermodynamics II	3
Elements of Heat Transfer	3
Mechanical Design	3
Math elective	3
Total hours	30

Senior Year

Capstone Design I and II	6
Engineering Experimentation II	3
Design of Control Systems	3
Design with Finite Element Methods	3
Technical electives	9
Supportive elective	3
UK Core courses	6
Total hours	33

in the development of job, co-op and internship search skills, and building career networks to eventually help you secure a rewarding career in your chosen field of study.

Student Involvement

Student organizations are an outgrowth of student interest and serve the needs of a variety of students. Many provide programs that supplement the classroom experience and extend into areas of service for the community. All provide learning and leadership training for participating students.

Student organizations that are typically of interest to mechanical engineering students include: American Society of Mechanical Engineers, Society of Automotive Engineers, Society of Manufacturing Engineers, Pi Tau Sigma, Tau Beta Pi, Society of Women Engineers, Engineers Without Borders and many others.

Career Prospects in Mechanical Engineering

Mechanical engineers work in virtually every industry you can think of: aerospace, automobile, manufacturing, industrial equipment design, consulting firms and government agencies. Examples of job placement for our graduates include: GE Appliances, GE Aviation, Cummins, Toyota, Lexmark, Trane, Link-Belt, Belcan, NASA and more.

The University of Kentucky's mechanical engineering program is accredited by the Engineering Accreditation Commission of ABET, www.abet.org.

Revised July 2017. Information subject to change. For the most up-to-date information on the UK College of Engineering, visit www.engr.uky.edu.