

CIVIL ENGINEERING

Civil engineering emphasizes infrastructure—geotechnical, water resources, environmental, transportation, construction and structural engineering, as well as other related fields. Our program allows students to discover which area (or combination of areas) of civil engineering is right for them. We emphasize more than classroom learning. For example, the Kentucky Transportation Center, the Kentucky Transportation Cabinet's research and training arm, is located near the Department of Civil Engineering building, providing research opportunities for students focused on transportation, structural, construction and geotechnical engineering. The Kentucky Water Resources Research Institute provides research opportunities and summer internships for students focused on water resources and environmental engineering. Our program also offers one of the nation's few railroad engineering programs, a resurgent field of great opportunity. Civil engineering graduates are properly equipped to meet the infrastructure challenges of today and tomorrow.

Pursuing Civil Engineering at UK

Students interested in the broad field of civil engineering must have a solid foundation in physics, chemistry and mathematics, as well as excellent communication skills. They must be effective members of teams and implement interdisciplinary solutions to technical and socioeconomic problems in an increasingly complex world. Our faculty and curriculum will go beyond preparing you to meet the requirements of today's employers and tomorrow's careers—you will facilitate a better future.

The Department of Civil Engineering has a broad field of study to provide a strong foundation for entry into the profession or graduate school. Major areas include construction engineering and project management, environmental engineering, geotechnical engineering, materials engineering, structural engineering, transportation engineering and water resources engineering. All of our students have both a professional and a faculty advisor to help them plan their academic program and career.

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 as you work alongside professors and graduate students. They happen on student design teams in the capstone design courses. They happen during cooperative education rotations and internships with companies all over the country. There are also numerous education abroad programs involving international travel and study.

FOR MORE INFORMATION, VISIT THESE WEBSITES:

Civil Engineering: www.engr.uky.edu/ce

University of Kentucky: www.uky.edu

College of Engineering: www.engr.uky.edu

Admissions: www.uky.edu/admissions

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

Scholarships: www.uky.edu/scholarships

Civil Engineering Curriculum Sample

This is a sample list of classes a student will take to pursue a degree in civil engineering. As part of the civil 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

Surveying	4
Chemistry II	3
Statics	3
Calculus III and IV	7
Physics II and lab	5
Computer Graphics and Comm.	3
Deformable Solids and lab	4
Engineering Statistics	3
Total hours	32

Junior Year

Technical Writing	3
Principles of Physical Geology	4
Intro to Construction Engineering	3
Intro to Fluid Mechanics	4
Civil Engineering Materials	3
Transportation Engineering	3
Intro to Environmental Engineering	3
Structural Analysis	3
Engineering Science elective	3
Math or Science elective	3
UK Core course	3
Total hours	35

Senior Year

Water Resources Engineering	4
Soil Mechanics	4
Structures elective	3
Design electives	6
Civil Engineering Seminar	1
Systems Design	3
Technical elective	3
Supportive elective	3
UK Core courses	6
Total hours	33

Many undergraduate engineering students conduct research with civil engineering faculty members. These "Research Experiences for Undergraduates," or REUs, allow undergraduate students to perform hands-on research in our structures, environmental, hydrosystems, soils and materials laboratories. REUs often perform site visits and collect research data in the field using state-of-the-art research instrumentation such as innovative sensors for infrastructure and environmental monitoring.

Student Involvement

Student organizations that are typically of interest to civil engineering students include: RailCats, American Society of Civil Engineers, Chi Epsilon (Civil Engineering honorary), Institute for Transportation Engineers, the Kentucky Society of Professional Engineers, the National Society of Black Engineers, the Society of Women Engineers and Tau Beta Pi (engineering honorary).

Career Prospects in Civil Engineering

Civil engineers are employed by the construction industry, engineering or architectural firms, utility companies, energy companies, telecommunications businesses, manufacturing companies, consulting firms, railroads and state and federal governmental agencies.

Scholarship Opportunities

The Kentucky Transportation Cabinet offers approximately 45 transportation scholarships each year to UK students who are also Kentucky residents. These provide each recipient with stipends of \$9,600 for the academic year for freshman and sophomore students and \$10,400 for the academic year for junior and senior students. These scholarships require the recipient to accept employment with the Kentucky Transportation Cabinet after graduation for one year for each year the scholarship was accepted. Other scholarships from the Department of Civil Engineering are also available.

The University of Kentucky's civil 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.