

# CIVIL ENGINEERING



The Civil Engineering Program prepares students to become planners, designers, constructors, stewards of environmental resources, technological innovators, risk managers and public policy decision makers. Students discover which area of civil engineering best suits them through close interaction with faculty members and through experiential learning and research opportunities. For example, the Kentucky Transportation Center provides research opportunities where students can focus on transportation, structural, construction and geotechnical engineering. Also, the Kentucky Water Resources Research Institute provides research opportunities and summer internships where students can study water resources and environmental engineering.

FOR MORE INFORMATION, VISIT:

[www.engr.uky.edu/explore/civil-engineering](http://www.engr.uky.edu/explore/civil-engineering)

## 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 contains several options while pursuing a civil engineering degree. Contact the Director of Undergraduate Studies or see departmental website for details on specific alternatives.

### Freshman Year

Calculus I and II	8
Composition & Communication I and II	6
Chemistry I and Physics I and Lab	9
Engineering Exploration I and II	3
Fundamentals of Engineering Computing	2
UK Core Course	3
<b>Total hours</b>	<b>31</b>

### Sophomore Year

Calculus III and IV	7
Chemistry II	3
Computer Graphics and Communication	3
Deformable Solids and Lab	4
Engineering Statistics Elective	3
Physics II and Lab	5
Statics	3
Surveying	4
<b>Total hours</b>	<b>32</b>

### Junior Year

Civil Engineering Materials	3
Engineering Science Elective	3
Fundamentals & Application of Sustainable Eng.	3
Intro to Construction Engineering	3
Intro to Environmental Engineering	3
Intro to Fluid Mechanics	4
Principles of Physical Geology	4
Structural Analysis and Design	3
Technical Writing	3
Transportation Engineering	3
<b>Total hours</b>	<b>32</b>

### Senior Year

Civil Engineering Seminar	1
Design Electives	6
Math Science Technical Elective	3
Soil Mechanics	4
Systems Design	3
Technical Electives	3
UK Core Courses	9
Water Resources Engineering	4
<b>Total hours</b>	<b>33</b>

## PURSuing CIVIL ENGINEERING AT UK

Civil engineering students learn to be effective team members and implement interdisciplinary solutions to complex problems. Various concentration areas include construction engineering, construction project management, environmental engineering, geotechnical engineering, materials engineering, sustainable/humanitarian engineering, structural engineering, transportation engineering, water resources engineering, sustainable infrastructure and humanitarian engineering.

## CAREER PROSPECTS IN CIVIL ENGINEERING

Civil engineers are employed by a variety of industries and organizations, such as the construction industry, architectural firms, utility companies, energy companies, telecommunications businesses, manufacturing companies, engineering consulting firms, railroad companies, local, state & federal governmental agencies, and research agencies.

## UNDERGRADUATE EXPERIENCES IN CIVIL ENGINEERING

Through their involvement in undergraduate research, students have helped develop CatStrong, a lightweight carbon-fiber product that has been used to repair several Kentucky bridges. Others have engaged in water and environmental research to understand and improve the natural environment, advancing civil engineering best practices in Kentucky and the nation. Some students have used drones to study landslides and infrastructures, while others have worked on analysis of transportation network companies, automated vehicles and smart transportation systems.

## CO-OPS

UK provides numerous opportunities to co-op with companies. Students can co-op during the fall, spring or summer semesters. Those who complete three co-op rotations will receive formal recognition on their transcript and a special cord at graduation. Students work with the Co-op Director and their academic advisor to determine the best timing for their co-op experience.

The University of Kentucky's civil engineering program is accredited by the Engineering Accreditation Commission of ABET, [www.abet.org](http://www.abet.org).

**Revised August, 2021.** Information subject to change. For the most up-to-date information on the UK College of Engineering, visit [www.engr.uky.edu](http://www.engr.uky.edu).