

CHEMICAL ENGINEERING



 College of
Engineering

Modern chemical engineering combines knowledge of chemistry and molecular interactions with the discipline of engineering to address problems at both the small scale and the large scale. Chemical engineers invent new processes, improve existing ones and design and operate plants and equipment to transform raw feed stocks into useful products across a wide range of industries, including agricultural and food-based products; consumer products; fine chemicals; fuels and petrochemicals; pharmaceuticals; plastics and electronic materials.

FOR MORE INFORMATION, VISIT:

www.engr.uky.edu/explore/chemical-engineering



CHEMICAL ENGINEERING CURRICULUM SAMPLE

This is a sample list of classes a student will take to pursue a degree in chemical engineering. As part of the chemical 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 chemical engineering degree. Consult the departmental website for details on specific paths.

Freshman Year

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

Sophomore Year

Calculus III and IV	7
Chemistry II and Lab	5
Computational Tools in Chemical Engineering	3
Engineering Statistics	3
Engineering Thermodynamics	3
Materials Science	3
Physics II	4
Process Principles	3
UK Core Course	3
Total hours	34

Junior Year

Chemical Engineering Lab I	2
Engineering Profession	0
Engineering/Science Elective	3
Fluid Mechanics	3
Heat and Mass Transfer	4
Organic Chemistry I and II and Lab	7
Physical Chemistry for Engineers	3
Process Modeling	3
Separation Processes	3
Technical Writing	3
Total hours	31

Senior Year

Chemical Engineering Lab II	3
Chemical Reactor Design	3
Engineering Profession	0
Engineering/Science Electives	9
Process Design I and II	6
Process Control	3
Professionalism, Ethics and Safety	2
UK Core Courses	6
Total hours	32

PURSuing CHEMICAL ENGINEERING AT UK

Chemical engineering students at UK experience an environment where faculty are readily accessible inside and outside the classroom, and where students have the chance to grow personally and professionally through hands-on research projects, industrial cooperative education and service opportunities.

CAREER PROSPECTS IN CHEMICAL ENGINEERING

The breadth and analytical rigor of the chemical engineering bachelor's degree make it one of the most valued technical credentials. Starting salaries for chemical engineering graduates are typically among the highest of all majors. Chemical engineers are in demand and work in a wide range of industries.

UNDERGRADUATE RESEARCH IN CHEMICAL ENGINEERING

Chemical engineering faculty members at UK are committed to providing a broad range of research opportunities. Undergraduate students work side-by-side with faculty members and graduate students on experimental and computational problems at the frontiers of chemical engineering knowledge. Areas of research emphasis include advanced materials; biotechnology and drug delivery (including cancer research); energy and sustainability; environmental engineering; membrane science; pharmaceutical engineering and polymers.

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 chemical engineering program is accredited by the Engineering Accreditation Commission of ABET, 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.