

Chemical Engineering

College of Engineering

A foundation in mathematics, chemistry, and physics is required for the study of chemical engineering. Fundamental principles related to the transformation of matter and energy are developed in subjects including thermodynamics, fluid flow, separations, heat and mass transfer, reactor design, and chemical process design. Undergraduate electives are available in biopharmaceutical engineering, energy and fuels, environmental engineering, and materials engineering and nanotechnology. A program is also available to fulfill pre-medical requirements simultaneously with requirements for the B.S. in chemical engineering.

Admission to the degree program is selective. Students should refer to the UK *Bulletin* for general information concerning admission and graduation requirements.

Degree Requirements

In addition to fulfilling UK Core and College of Engineering requirements, students must complete the chemical engineering curriculum. The following curriculum meets the requirements for the B.S. degree.

Freshman Year

First Semester	Hours
EGR 101 Engineering Exploration I § Δ	1
EGR 102 Fundamentals of Engineering Computing	2
CHE 105 General College Chemistry I	
or	
PHY 231 General University Physics °	4
CHE 111 Laboratory to Accompany General Chemistry I	1
CIS/WRD 110 Composition and Communication I	3
MA 113 Calculus I	4
Second Semester	
EGR 103 Engineering Exploration II Δ	2
CIS/WRD 111 Composition and Communication II	3
MA 114 Calculus II	4
PHY 231 General University Physics	
or	
CHE 105 General College Chemistry I °	4
UK Core – Social Sciences	3

Sophomore Year

First Semester	Hours
CME 200 Process Principles	3
MA 213 Calculus III	4
CHE 107 General College Chemistry II	3
CHE 113 Laboratory to Accompany General Chemistry II	2
MSE 201 Materials Science	3
UK Core – Humanities	3
Second Semester	
CME 320 Engineering Thermodynamics	4
CME 220 Computational Tools in Chemical Engineering	3
MA 214 Calculus IV	3
PHY 232 General University Physics	4
STA 381 Engineering Statistics – A Conceptual Approach	3

Junior Year

First Semester	Hours
CME 415 Separation Processes	3
CME 330 Fluid Mechanics	3
CHE 446G Physical Chemistry for Engineers	3
CHE 230 Organic Chemistry I	3
CHE 231 Organic Chemistry Laboratory I	1
WRD 204 Technical Writing*	3
Second Semester	
CME 006 The Engineering Profession (Junior and Senior)	0
CME 420 Process Modeling in Chemical Engineering	3
CME 425 Heat and Mass Transfer	4
CME 432 Chemical Engineering Laboratory I	2
CHE 232 Organic Chemistry II	3
Engineering/Science Elective	3
UK Core – Citizenship - US	3

Senior Year

First Semester	Hours
CME 006 The Engineering Profession (Junior and Senior)	0
CME 470 Professionalism, Ethics and Safety	2
CME 433 Chemical Engineering Laboratory II	3
CME 455 Chemical Engineering Process Design I	3
CME 550 Chemical Reactor Design	3
Engineering/Science Elective	3
UK Core – Global Dynamics	3
Second Semester	
CME 006 The Engineering Profession (Junior and Senior)	0
CME 456 Chemical Engineering Process Design II	4
CME 462 Process Control	3
Engineering/Science Elective	3
Engineering/Science Elective	3
Supportive Elective	3

§ *Transfer students who declare a major will take EGR 112, Engineering Exploration for Transfer Students, in place of EGR 101.*

Δ *Students must complete both EGR 101 and EGR 103 to fulfill the UK Core Arts and Creativity requirement.*

° *Based on advisor consult.*

**Graduation Composition and Communication Requirement (GCCR) course.*

University of Kentucky is accredited by the Southern Association of Colleges and Schools Commission on Colleges to award associate, baccalaureate, masters, and doctorate degrees. Contact the Commission on Colleges at 1866 Southern Lane, Decatur, Georgia 30033-4097, call 404-679-4500, or online at www.sacscoc.org for questions about the accreditation of University of Kentucky.