

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
CME 101 Introduction to Chemical Engineering	1
CHE 105 General College Chemistry I	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	
MSE 201 Materials Science	3
CHE 107 General College Chemistry II	3
CHE 113 Laboratory to Accompany General Chemistry II	2
MA 114 Calculus II	4
CIS/WRD 111 Composition and Communication II	3

Sophomore Year

First Semester	Hours
CME 200 Process Principles	3
MA 213 Calculus III	4
PHY 231 General University Physics	4
PHY 241 General University Physics Laboratory	1
CHE 230 Organic Chemistry I	3
CHE 231 Organic Chemistry Laboratory I	1
Second Semester	
CME 320 Engineering Thermodynamics	4
CHE 232 Organic Chemistry II	3
CME 220 Computational Tools in Chemical Engineering	3
MA 214 Calculus IV	3
PHY 232 General University Physics	4

Junior Year

First Semester	Hours
CME 415 Separation Processes	3
CHE 446G Physical Chemistry for Engineers	3
CME 330 Fluid Mechanics	3
ENG 2XX Writing Intensive Course	3
Technical Elective	3
UK Core	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
Chemistry Elective	3
Supportive Elective	3
UK Core	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
CME Elective	3
UK Core	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
CME Elective	3
Bio Elective or Materials Elective	3
UK Core	3