

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
CIS/WRD 110 Composition and Communication I	3
MA 113 Calculus I	4
EGR 101 Engineering Exploration I § Δ	1
EGR 102 Fundamentals of Engineering Computing	2
CHE 105 General College Chemistry I	4
CHE 111 General Chemistry I Laboratory	1

Second Semester

CIS/WRD 111 Composition and Communication II	3
MA 114 Calculus II	4
EGR 103 Engineering Exploration II § Δ	2
PHY 231 General University Physics	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 General Chemistry II Laboratory	2
MSE 201 Materials Science	3
UK Core – Humanities	3

Second Semester

CME 220 Computational Tools in Chemical Engineering	3
CME 320 Engineering Thermodynamics	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 330 Fluid Mechanics	3
CME 415 Separation Processes	3
CHE 230 Organic Chemistry I	3
CHE 231 Organic Chemistry Laboratory I	1
CHE 446G Physical Chemistry for Engineers	3
WRD 204 Technical Writing*	3

Second Semester	Hours
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

Senior Year

First Semester	Hours
CME 006 The Engineering Profession (Junior and Senior)	0
CME 433 Chemical Engineering Laboratory II	3
CME 455 Chemical Engineering Process Design I	3
CME 470 Professionalism, Ethics and Safety	2
CME 550 Chemical Reactor Design	3
UK Core – Citizenship - USA	3
Engineering/Science Elective	3

Second Semester	Hours
CME 006 The Engineering Profession (Junior and Senior)	0
CME 456 Chemical Engineering Process Design II	3
CME 462 Process Control	3
UK Core – Citizenship - Global Dynamics	3
Engineering/Science Elective	3
Engineering/Science Elective	3

§ *Transfer students who declare a major will take EGR 215, Introduction to the Practice of Engineering for Transfer Students, in place of EGR 101 and EGR 103.*

Δ *Students must complete both EGR 101 and EGR 103 to fulfill the UK Core Arts and Creativity requirement. Transfer students may satisfy the UK Core Arts and Creativity requirement by taking EGR 215.*

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