(For students admitted in 2026-27 under the 4-year degree)

BEng in Chemical Engineering

In addition to the requirements of their major programs, students are required to complete the University requirements for graduation. For details please refer to the respective section on this website.

Students may use no more than 9 credits earned from courses delivered in online mode, including HKUST self-paced online [SPO] courses and other online credits approved through the University's credit transfer procedures, to satisfy the graduation requirements of a degree program.

For students graduating with an additional major, they must take all the requirements specified for that major, within which they must complete at least 20 single-counted credits. These 20 credits cannot be used to fulfill any other requirements for graduation except for the 120-credit degree requirement.

Under the new 30-credit Common Core Program which is applicable to students admitted to the University in 2022-23 and thereafter, courses that have been counted towards Major Requirements are not allowed to be reused for fulfilment of the University Common Core Requirements. Students should look up the details of the Common Core Program including the general and School-/program-specific distributional requirements posted on the Common Core website where the link to it is available on this website.

Major Requirements

Engineering Fundamental Course(s)

			Credit(s) attained
COMP		Note: COMP 1022P OR COMP 1023 OR COMP 2011 OR COMP 2012H	3-5
COMP	1022P**	Introduction to Computing with Java	3
COMP	1023	Introduction to Python Programming	3
COMP	2011	Programming with C++	4
COMP	2012H	Honors Object-Oriented Programming and Data Structures	5
CHEM	1012	General Chemistry B: Atomic Structure, Molecules, and Bonding Theories	3
MATH		Note: MATH 1013 OR MATH 1020 OR MATH 1023	3-4
MATH	1013	Calculus I	3
MATH	1020	Accelerated Calculus	4
MATH	1023	Honors Calculus I	3
PHYS		Note: PHYS 1112 OR PHYS 1312	3
PHYS	1112	General Physics I with Calculus	3
PHYS	1312	Honors General Physics I	3

Required Course(s)

			Credit(s) attained
CENG	1000	Foundations of Chemical and Biological Engineering	3
CENG	1010	Academic and Professional Development I	0
CENG	1110	Introduction to Chemical Engineering	3
CENG	1500	A First Course on Materials Science and Applications	3
CENG	2210	Chemical and Biological Engineering Thermodynamics	3
CENG	2220	Transport Phenomena I	3
CENG	2310	Modeling for Chemical and Biological Engineering I	3
CENG	2320	Modeling for Chemical and Biological Engineering II	3
CENG	3110	Process Dynamics and Control	3
CENG	3150	Integrated Chemical Process and Product Design	5
CENG	3210	Separation Processes	3
CENG	3220	Transport Phenomena II	3
CENG	3230	Chemical and Biological Reaction Engineering	3
CENG	3300	Data Science for Molecular Engineering	3
CENG	3950	Chemical and Environmental Engineering Laboratory**	4
CENG	4020	Academic and Professional Development II	0
CENG		Note: CENG 4920 OR CENG 4930 OR CENG 4940	6
CENG	4920	Chemical Engineering Capstone Design	6
CENG	4930	Chemical Engineering Thesis Research	6
CENG	4940	Chemical Engineering Industrial Project	6
BIEN/LIFS		Note: BIEN 2410 OR BIEN 2610 OR LIFS 1901	3
BIEN	2410	Cellular and Systems Physiology for Engineers	3
BIEN	2610	Chemical Biology for Engineers	3
LIFS	1901	General Biology I	3
CHEM	1052	Laboratory for General Chemistry B	1
CHEM	2111	Fundamentals of Organic Chemistry	3
CHEM	2155	Fundamental Organic Chemistry Laboratory	1

Elective(s)

			Minimum credit(s) required
CENG/BIEN/ COMP/ENEG/ CHEM		CENG Electives (Courses from the specified list; students taking the Environment Option must take CENG 4140 and CENG 4710.)	12
CENG	4000	Special Topics	3
CENG	4130	Plant Design and Economics	3
CENG	4140	Energy Resources, Conversions and Technologies	3
CENG	4160**	Prototype Development for Chemical Processes and Products	3
CENG	4510	Nature Engineering and DNA Nanotechnology	3
CENG	4540	Nanomaterials and Applications in Chemical Engineering	3
CENG	4620	Bioproducts and Processing	3
CENG	4630	Food Processing Technology	3
CENG	4640	Biomolecular Engineering	3
CENG	4650	Biomaterials and Drug Delivery	3
CENG	4670	Pharmaceutical Engineering	3
CENG	4710	Environmental Control	3
CENG	4950	Chem-E-Car	3
CENG	4980	Investigation Project	3
CENG	5210	Advanced Separation Processes	3
CENG	5230	Advanced Control and Data Science	3
CENG	5240	Deep Learning for Chemical and Biological Engineering	3
CENG	5550	Polymer Physics and Advanced Applications	3
CENG	5840	Nanomaterials for Chemical Engineering Applications	3
CENG	5930	Electrochemical Energy Technologies	3
BIEN	5070	Synthetic Biology	3
COMP	2211	Introduction to Artificial Intelligence	3
ENEG	4130	Photovoltaic Materials and Devices	3
CHEM	2311	Analytical Chemistry	3

Students may opt to graduate with or without an option. Students who take an option MUST complete all requirements specified in addition to the major requirements.

Option(s)

Environment Option

Students in the Environment Option should also take CENG 4140 and CENG 4710 to fulfill the CENG Electives as specified under the Major Requirements.

Required Course(s)

			Credit(s) attained
ENEG	1700	Introduction to Energy and Environmental Engineering	3

Elective Course(s)

			Minimum credit(s) required
CENG/CIVL/ ENVR		Environment Electives (1 course from the specified elective list)	3
CENG	4720	Environmental Impact Assessment and Management Systems	3
CIVL	4430	Environmental Impact Assessment	3
CIVL	4450	Carbon Footprint Analysis and Reduction	3
ENVR	3110	Life Cycle Assessment for Sustainable Development	3
ENVR	3220	Energy Sources and Usage	3

***Remarks on course(s):*

- CENG 3950: The course title will be changed to "Chemical Engineering Laboratory" starting from Fall, 2027-28.
- CENG 4160: The course was last offered in 2022-23 and was deleted subsequently.
- COMP 1022P: The course was last offered in 2024-25 and was deleted subsequently.