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

BEng in Bioengineering

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
CHEM	1052	Laboratory for General Chemistry B	1
LIFS		Note: Students with level 3 or above in HKDSE 1x Biology are exempted from taking LIFS 1901	0-3
LIFS	1901	General Biology I	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
BIEN	1600	Introduction to Bioengineering	3
BIEN	2410	Cellular and Systems Physiology for Engineers	3
BIEN	2610	Chemical Biology for Engineers	3
BIEN	3250	Rate and Transport Processes in Biological Systems	3
BIEN	3300	Data Science for Molecular Engineering	3
BIEN		Note: BIEN 3310 OR BIEN 3320	3
BIEN	3310	Data Science for Neural Engineering	3
BIEN	3320	Data Science for Biology and Medicine	3
BIEN	3410	Bioimaging and Image Analysis	3
BIEN	3420	Biosensors and Bioinstrumentation for Healthcare	3
BIEN	3910	Bioengineering Laboratory	4
BIEN		Note: BIEN 4920 OR BIEN 4930 OR BIEN 4940	6
BIEN	4920	Bioengineering Capstone Design	6
BIEN	4930	Bioengineering Thesis Research	6
BIEN	4940	Bioengineering Industrial Project	6
CENG	1000	Foundations of Chemical and Biological Engineering	3
CENG	1010	Academic and Professional Development I	0
CENG	2210	Chemical and Biological Engineering Thermodynamics	3
CENG	2310	Modeling for Chemical and Biological Engineering I	3
CENG	2320	Modeling for Chemical and Biological Engineering II	3
CENG	4020	Academic and Professional Development II	0

Elective(s)

			Minimum credit(s) required
SSCI/SENG/ AIS		Bioengineering Electives (5 courses from the specified elective list, of which at least 9 credits should be taken from a single specialty area (Area 1 or Area 2). Out of the 15 credits taken, at least 9 credits should be at 4000-level or above. Courses taken as Major Required Courses may not be counted towards this elective requirement.)	15
Area 1: Biomedical Data Acquisition and Analytics			
BIEN	3310	Data Science for Neural Engineering	3
BIEN	4310**	Statistical Signal Analysis and Applications in Neural Engineering	3
BIEN	5040	Introduction to Neural Engineering	3
BIEN	5060	Fundamentals and Applications of Sensing Technologies in Healthcare	3
CENG	5240	Deep Learning for Chemical and Biological Engineering	3
COMP	2012	Object-Oriented Programming and Data Structures	4

COMP	2012H	Honors Object-Oriented Programming and Data Structures	5
COMP	2211	Introduction to Artificial Intelligence	3
COMP	4211	Machine Learning	3
COMP	4331	Data Mining	3
COMP	4421	Image Processing	3
COMP	5423	Deep Learning in Medical Image Analysis	3
ELEC	2100	Signals and Systems	4
ELEC	2420	Basic Electronics	3
ELEC	4820	Medical Imaging	3
EMIA	4110	Practical Machine Learning	3
LIFS	3070	Introduction to Biophysical Instrumentation	3

Area 2: Bioprocesses, Biomaterials and Bioanalysis

BIEN	4110	Regulatory Affairs in the Healthcare Industry	3
BIEN	5070	Synthetic Biology	3
CENG	3150	Integrated Chemical Process and Product Design	5
CENG	4510	Nature Engineering and DNA Nanotechnology	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	5610	Protein Engineering	3
CHEM	2111	Fundamentals of Organic Chemistry	3
CHEM	2311	Analytical Chemistry	3
LIFS	3060	Microbiology	3
LIFS	4888	Development and Registration of Pharmaceutical Products	3

Other electives

BIEN	4000	Special Topics in Bioengineering	1-4
CENG	4160**	Prototype Development for Chemical Processes and Products	3
UCOP	3200	Design for Global Health	3
LIFS	3240	Introduction to Neurobiology	3
LIFS	4370	Human Genetics and Personalized Medicine	3
LIFS	4760	Biochemistry of Diseases	3

***Remarks on course(s):*

- BIEN 4310: The course was last offered in 2021-22 and was deleted subsequently.
- 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.