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

BEng in Computer Science

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	1023	Introduction to Python Programming	3
MATH		Note: [(MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020]	4-6
MATH	1013	Calculus I	3
MATH	1014	Calculus II	3
MATH	1020	Accelerated Calculus	4
MATH	1023	Honors Calculus I	3
MATH	1024	Honors Calculus II	3
MATH		Note: MATH 2111 OR MATH 2121 OR MATH 2131	3-4
MATH	2111	Matrix Algebra and Applications	3
MATH	2121	Linear Algebra	4
MATH	2131	Honors in Linear and Abstract Algebra I	4

Required Course(s)

			Credit(s) attained
COMP		Note: [COMP 1991 AND (COMP 4981 OR COMP 4981H)] OR [COMP 4910]	6
COMP	1991	Industrial Experience	0
COMP	4910	Co-op Program	6
COMP	4981	Final Year Project	6
COMP	4981H	Final Year Thesis	6

COMP		Note: (COMP 2011 AND COMP 2012) OR COMP 2012H	5-8
COMP	2011	Programming with C++	4
COMP	2012	Object-Oriented Programming and Data Structures	4
COMP	2012H	Honors Object-Oriented Programming and Data Structures	5
COMP	2611	Computer Organization	4
COMP		Note: COMP 2711 OR COMP 2711H	4
COMP	2711	Discrete Mathematical Tools for Computer Science	4
COMP	2711H	Honors Discrete Mathematical Tools for Computer Science	4
COMP		Note: COMP 3111 OR COMP 3111H	4
COMP	3111	Software Engineering	4
COMP	3111H	Honors Software Engineering	4
COMP	3511	Operating Systems	3
COMP		Note: COMP 3711 OR COMP 3711H	3-4
COMP	3711	Design and Analysis of Algorithms	3
COMP	3711H	Honors Design and Analysis of Algorithms	4
COMP		Note: Students are required to take COMP 4900 for every regular term in which they are in residency at HKUST with major in COMP	0
COMP	4900	Academic and Professional Development	0
ELEC/IEDA/ MATH		Note: ELEC 2600 OR ELEC 2600H OR IEDA 2520 OR IEDA 2540 OR MATH 2411 OR MATH 2421 OR MATH 2431	3-4
ELEC	2600	Probability and Random Processes in Engineering	4
ELEC	2600H**	Honors Probability and Random Processes in Engineering	4
IEDA	2520	Probability for Engineers	3
IEDA	2540	Statistics for Engineers	3
MATH	2411	Applied Statistics	4
MATH	2421	Probability	4
MATH	2431	Honors Probability	4

Elective(s)

			Minimum credit(s) required
COMP		COMP 2000-level or above Elective (Any course(s) of the subject and level as specified)	3
COMP		COMP Electives (5 courses from the specified elective list, of which at least 3 courses should be taken from 1 area and at least 2 courses outside that area (including course(s) in the Courses Without Associated Area). Students may use at most one course under Deep Learning Applications (COMP 4471 and COMP 5215) to count towards this elective requirement.)	15
Artificial Intelligence / Theory Area			
COMP	3211	Learning, Reasoning, and Decision Making in AI	3
COMP	3721	Theory of Computation	3

COMP	4211	Machine Learning	3
COMP	4212	Reinforcement Learning	3
COMP	4221	Introduction to Natural Language Processing	3
COMP	4222	Machine Learning with Structured Data	3
COMP	4331	Data Mining	3
COMP	4332	Big Data Mining and Management	3
COMP	4421	Image Processing	3
COMP	4471	Deep Learning in Computer Vision	3
COMP	4541	Blockchain, Cryptocurrencies and Smart Contracts	3
COMP	4551	Large-Scale Machine Learning System for Foundation Models	3
COMP	4901B	Large Language Models	3
COMP	4901D	Embedded AI Systems	3
COMP	4901L	Foundations of Computer Vision	3
COMP	4901R	Algorithmic Game Theory	3
COMP	4901T	Introduction to Computer Vision	3
COMP	4901V	Large-Scale Deep Perception, Localization, and Planning for Autonomous Vehicles	3
COMP	4901X	Formal Reasoning about Programs	3
COMP	5211	Advanced Artificial Intelligence	3
COMP	5212	Machine Learning	3
COMP	5214	Advanced Deep Learning Architectures	3
COMP	5215	Perception and Information Processing for Robotics	3
COMP	5221	Natural Language Processing	3
COMP	5331	Knowledge Discovery in Databases	3
COMP	5421	Computer Vision	3
COMP	5711	Introduction to Advanced Algorithmic Techniques	3
COMP	5712	Introduction to Combinatorial Optimization	3
COMP	5713	Computational Geometry	3

Vision & Graphics / Multimedia Area

COMP	4411	Computer Graphics	3
COMP	4421	Image Processing	3
COMP	4431	Multimedia Computing	3
COMP	4441	Music Video Creation	3
COMP	4451	Game Programming	3
COMP	4461	Human-Computer Interaction	3
COMP	4462	Data Visualization	3
COMP	4471	Deep Learning in Computer Vision	3
COMP	4901T	Introduction to Computer Vision	3
COMP	5411	Advanced Computer Graphics	3
COMP	5421	Computer Vision	3

Software / Database Area

COMP	3021	Java Programming	3
COMP	3031	Principles of Programming Languages	3
COMP	3311	Database Management Systems	3
COMP	4021	Internet Computing	3
COMP	4121	Modern Compiler Construction	3

COMP	4321	Search Engines for Web and Enterprise Data	3
COMP	4331	Data Mining	3
COMP	4332	Big Data Mining and Management	3
COMP	4521	Mobile Application Development	3
COMP	4651	Cloud Computing and Big Data Systems	3
COMP	4901A	Distributed Systems	3
COMP	5111	Fundamentals of Software Analysis	3
COMP	5112	Parallel Programming	3
COMP	5311	Database Architecture and Implementation	3
COMP	5331	Knowledge Discovery in Databases	3

Computer Systems / Networking Area

COMP	3631	Cryptography	3
COMP	4521	Mobile Application Development	3
COMP	4531	IoT and Smart Sensing	3
COMP	4541	Blockchain, Cryptocurrencies and Smart Contracts	3
COMP	4611	Design and Analysis of Computer Architectures	3
COMP	4621	Computer and Communication Networks	3
COMP	4632	Practicing Cybersecurity: Attacks and Counter-measures	3
COMP	4634	Cybersecurity	3
COMP	4635	Practical Cloud Computing Security	3
COMP	4641	Social Information Network Analysis and Engineering	3
COMP	4651	Cloud Computing and Big Data Systems	3
COMP	4901A	Distributed Systems	3
COMP	4901Q	High Performance Computing	3
COMP	5621	Computer Networks	3
COMP	5631	Cryptography and Security	3

Courses Without Associated Area

COMP	4911	IT Entrepreneurship	3

***Remarks on course(s):*

- ELEC 2600H: The course was last offered in 2021-22 and was deleted subsequently.