

## The University of Hong Kong – Faculty of Engineering Course List 2024/25

### Important Notes:

1. Please note that the available course list is for reference only. The approval of courses is at the discretion of respective faculty.

Actual enrolment is subject to the availability of courses, quota and class schedule.

[The information could be changed without prior notice.]

2. Some courses may have special enrolment requirements (e.g. prerequisite). Please contact [enggex@hku.hk](mailto:enggex@hku.hk) if additional course information is required.

Course Level	Course Code	Course Title	Offering Semester	Credits
UG	BMED1207	Fundamentals of chemistry and biology for biomedical engineering	2	6
UG	BMED2206	Engineering in biology and medicine	1	6
UG	BMED2301	Life sciences I (Biochemistry)	1	6
UG	BMED2302	Life sciences II (Cell Biology & Physiology)	2	6
UG	BMED2500	Biomedical signals and linear systems	2	6
UG	BMED2600	Biomechanics for biomedical engineering	2	6
UG	BMED2810	Engineering management and society	1 & 2	6
UG	BMED3301	Life sciences III (Physiology)	1	6
UG	BMED3500	Electromagnetics in biomedicine	2	6
UG	BMED3501	Medical imaging	2	6
UG	BMED3600	Biomaterials science and engineering	1	6
UG	BMED3603	Statistics and mathematical analysis for biomedical engineering	2	6
UG	BMED4500	Biomedical instrumentation and systems	1	6
UG	BMED4501	Biophotonics	2	6
UG	BMED4505	Advanced bioelectronics	2	6
UG	BMED4506	Quantum technologies in biomedical sciences	2	6
UG	BMED4601	Biomaterials design and applications	1	6
UG	BMED4602	Molecular and cellular biomechanics	1	6
UG	BMED4604	Cell and tissue engineering	2	6
UG	CIVL1105	Environmental engineering	1 & 2	6
UG	CIVL1113	Engineering mechanics & materials	1 & 2	6
UG	CIVL1115	Civil engineering informatics	1 & 2	6
UG	CIVL2102	Engineering geology and rock mechanics	1 & 2	6
UG	CIVL2103	Fluid mechanics	1 & 2	6
UG	CIVL2104	Hydraulics and hydrology	1 & 2	6
UG	CIVL2106	Soil mechanics	1 & 2	6
UG	CIVL2108	Principles of civil engineering management	1 & 2	6
UG	CIVL2111	Transportation engineering	1 & 2	6
UG	CIVL2112	Structural analysis	1 & 2	6
UG	CIVL2113	Structural design	1 & 2	6
UG	CIVL3103	Construction project management	1 & 2	6
UG	CIVL3107	Environmental impact assessment of civil engineering projects	1	6
UG	CIVL3108	Foundation engineering	1	6
UG	CIVL3112	Prestressed concrete structures	1	6
UG	CIVL3114	Slope engineering	2	6
UG	CIVL3115	Solid and hazardous waste management	2	6
UG	CIVL3116	Steel structures	2	6
UG	CIVL3119	Traffic engineering	1	6
UG	CIVL3120	Transportation infrastructure engineering	2	6
UG	CIVL3121	Water resources engineering	2	6
UG	CIVL3129	Numerical analysis in geotechnical engineering	1	6
UG	CIVL3131	Earth retaining system	1	6
UG	CIVL3132	Geotechnical testing instrumentation and monitoring	2	6
UG	CIVL3133	Ground improvement	1	6
UG	CIVL3134	Environmental geotechnology	2	6
UG	CIVL3138	Advanced theory and design of structures	2	6
UG	CIVL3139	Building information Modelling (BIM) management for civil engineering	2	6
UG	COMP3231	Computer architecture	1	6
UG	COMP3258	Functional programming	2	6
UG	COMP3259	Principles of programming languages	2	6
UG	COMP3270	Artificial intelligence	1 & 2	6
UG	COMP3271	Computer graphics	1	6
UG	COMP3316	Quantum information and computation	2	6
UG	COMP3317	Computer vision	2	6
UG	COMP3322	Modern technologies on World Wide Web	1 & 2	6
UG	COMP3329	Computer game design and programming	2	6
UG	COMP3330	Interactive mobile application design and programming	1	6
UG	COMP3340	Applied deep learning	2	6
UG	COMP3353	Bioinformatics	1	6
UG	COMP3354	Statistical learning	1	6
UG	COMP3355	Cyber security	1	6

Course Level	Course Code	Course Title	Offering Semester	Credits
UG	COMP3356	Robotics	1	6
UG	COMP3357	Cryptography	1	6
UG	COMP3358	Distributed and parallel computing	2	6
UG	COMP3361	Natural language processing	2	6
UG	COMP3516	Data analytics for IoT	2	6
Graduate Elective	COMP8503	Advanced Topics in Visual Analytics	2	0
Graduate Elective	COMP8505	Advanced Topics in Language Models	2	0
UG	ELEC2147	Electrical energy technology	2	6
UG	ELEC2243	Introduction to electricity and magnetism	1	6
UG	ELEC2245	Control systems I	1	6
UG	ELEC2347	Fundamentals of optics	1	6
UG	ELEC2543	Object-Oriented programming and data structures	2	6
UG	ELEC2544	Introduction to electronic commerce and financial technology	2	6
UG	ELEC2843	Multivariable calculus and elementary partial differential equations	1	6
UG	ELEC2844	Probabilistic systems analysis	2	6
UG	ELEC3141	Power transmission and distribution	1	6
UG	ELEC3142	Electrical energy conversion	2	6
UG	ELEC3143	Power electronics	1	6
UG	ELEC3152	Metropolitan mass transportation	1	6
UG	ELEC3241	Signals and linear systems	2	6
UG	ELEC3243	Fundamentals of next-generation communications	1	6
UG	ELEC3244	Digital signal processing	2	6
UG	ELEC3249	Pattern recognition and machine intelligence	2	6
UG	ELEC3255	Control systems II	1	6
UG	ELEC3342	Digital system design	1	6
UG	ELEC3347	Electronic materials and quantum physics	1	6
UG	ELEC3349	Optical devices	1	6
UG	ELEC3350	Electronic circuits and devices I	2	6
UG	ELEC3441	Computer architecture	2	6
UG	ELEC3442	Embedded systems	2	6
UG	ELEC3443	Computer networks	1 & 2	6
UG	ELEC3543	Advanced systems programming	1	6
UG	ELEC3544	Introduction to data analytics	2	6
UG	ELEC3545	Introduction to embodied artificial intelligence	2	6
UG	ELEC3644	Advanced mobile apps development	1	6
UG	ELEC3844	Engineering management and society	1 & 2	6
UG	ELEC3845	Economics, finance and marketing for engineers	1	6
UG	ELEC3846	Numerical methods and optimization	2	6
UG	ELEC4141	Electric railway systems	2	6
UG	ELEC4142	Power system protection and switchgear	1	6
UG	ELEC4144	Electric vehicle technology	1	6
UG	ELEC4145	Building services - electrical services	2	6
UG	ELEC4146	Building services - electrical installations	1	6
UG	ELEC4147	Power system analysis and control	2	6
UG	ELEC4148	Smart grid and renewable energy systems	1	6
UG	ELEC4149	Basic lighting engineering	1	6
UG	ELEC4151	Hybrid electric propulsion technology	2	6
UG	ELEC4248	Photonic systems technologies	2	6
UG	ELEC4251	Microscopy	1	6
UG	ELEC4256	Wireless networking in the era of machine learning	1	6
UG	ELEC4245	Digital image processing	2	6
UG	ELEC4343	Design of digital integrated circuits	2	6
UG	ELEC4542	Introduction to deep learning and computer vision	1	6
UG	ELEC4544	Artificial intelligence and deep learning	2	6
UG	ELEC4546	Investment and trading for engineering students	1	6
UG	ELEC4547	Emerging technology for VR/AR	1	6
UG	ELEC4642	VLSI design principles	2	6
UG	IMSE2102	Fundamentals of supply chain management	1	6
UG	IMSE2109	Fundamentals of engineering design	1	6
UG	IMSE2113	Information systems	2	6
UG	IMSE2134	Operational research	1	6
UG	IMSE3107	Systems modelling and simulation	2	6
UG	IMSE3109	Quality management	2	6
UG	IMSE3111	Intelligent optimisation	2	6
UG	IMSE3115	Engineering economics and finance	1	6
UG	IMSE3126	Engineers in society	2	6
UG	IMSE3128	Human factors engineering	1	6
UG	IMSE3136	Operations planning and control	1	6
UG	IMSE4102	Engineering project management	1	6
UG	IMSE4119	Digital enterprises and e-commerce	1	6
UG	IMSE4122	Global logistics systems	1	6
UG	MECH2404	Drawing and elements of design and manufacture	1	6

Course Level	Course Code	Course Title	Offering Semester	Credits
UG	MECH2406	Fundamentals of electrical engineering	2	6
UG	MECH2407	Multivariable calculus and partial differential equations	1 & 2	6
UG	MECH2413	Engineering mechanics	1	6
UG	MECH2414	Thermofluids	2	6
UG	MECH2419	Properties of materials	1	6
UG	MECH3402	Engineering thermodynamics	2	6
UG	MECH3407	Advanced partial differential equation and complex variables	1	6
UG	MECH3408	Mechanics of fluids	2	6
UG	MECH3409	Mechanics of solids	1	6
UG	MECH3416	Fundamentals of aeronautical engineering	1	6
UG	MECH3418	Dynamics and control	1	6
UG	MECH3420	Air pollution control	1	6
UG	MECH3427	Design and manufacture	2	6
UG	MECH3429	Air conditioning and refrigeration	1	6
UG	MECH3430	Fire protection in building	2	6
UG	MECH3431	Utility services in buildings	1	6
UG	MECH4404	Automatic control	2	6
UG	MECH4407	CAD/CAM	2	6
UG	MECH4409	Energy conversion systems	2	6
UG	MECH4410	Engineering & technology management	2	6
UG	MECH4411	Heat transfer	1	6
UG	MECH4412	Product design and development	1	6
UG	MECH4415	Applied stress and strength analysis	1	6
UG	MECH4421	Viscous flow	1	6
UG	MECH4423	Building energy management and control systems	2	6