

Faculty of Engineering THE UNIVERSITY OF HONG KONG

HKU Engineering Envisage an Innovative Future

Why HKU Engineering02Comprehensive and Flexible Programmes04Major and Minor Options06HKU-Cambridge Undergraduate Recruitment Scheme (Engineering) / Dean's Club07Tam Wing Fan Innovation Wing / Tam Wing Fan Innovation Wing Two08Innovation Academy10

粘明物 速

aar

Student Experiential Learning	
Student Exchange	12
Internship	14
Service Learning	16
Undergraduate Research Fellowship Programme and others	17
Student Achievements	18

Bachelor of Engineering (BEng) Programmes [JS6963]

BEng	in Civil Engineering	20
BEng	in Computer Science	21
BEng	n Computer Engineering / Electrical Engineering /	22
	Electronic Engineering	
BEng	in Industrial Engineering and Logistics Management	23
BEng	in Mechanical Engineering	24
BEng	in Biomedical Engineering [JS6925]	25
BEng	in Engineering Science [JS6951]	26
BASc	in Financial Technology [JS6248]	27
BEng	in Data Science and Engineering [JS6262]	28
Globa	I Engineering and Business Programme [JS6937]	29
Admis	ssions Requirements	30
Engin	eering Society	32

Why HKU Engineering?

HKU is one of the best universities in Hong Kong, Asia, and the world.

We have a Long and Glorious History.

Established in 1911, HKU is the first university in Hong Kong. The Faculty of Engineering is one of the three founding faculties of the University.

We have the **Strongest Alumni Base**.

We have the **Highest Employment Rate** among any UGC-funded universities. Our graduate employment rate was **98.7%** in 2021. We have graduated the most engineers in Hong Kong with a strong network of **20,000+** alumni.





We admit the **Best Students**

We excel in **Research**

We have

4 Academicians Chinese Academy of Engineering

(50% among UGC-funded institutions)

13 Academicians Chinese Academy of Sciences

(41.9% among UGC-funded institutions)

2 Academicians National Academy of Engineering, USA

5 Academicians Royal Academy of Engineering, UK

Source: https://www.cpao.hku.hk/firstandforemost/research

Professional Recognition

Like Law, Medicine and Dentistry, studying Engineering is leading to a professional degree in Hong Kong. All programmes under the Bachelor of Engineering [JS6963] and Bachelor of Engineering in Biomedical Engineering [JS6925] and Global Engineering and Business Programme [JS6937] now being offered are accredited by The Hong Kong Institution of Engineers (HKIE). With that standing, the professional qualification of our engineering graduates is mutually recognised by most countries, such as the United States, Australia, Canada, Japan, Korea, New Zealand, Singapore and South Africa. Such recognition widens graduates' career opportunities globally.





Apply to **HKU**

BEng Programmes

Common Year 1

Programmes:

Year 2-4

Year 1

Year 2-4

Major options:

Healthcare Engineering

Energy Engineering

Comprehensive and Flexible Engineering Programme

(Common Code Admissions) [BEng] [JS6963]

BEng(IELM) - Industrial Engineering and Logistics Management

Declare 2nd Major² and/or Minor(s) before Year 4

HD/AD holders may apply to enter Year 3 directly

Programme Selection¹ at the end of Year 1

BEng(CivE) – Civil Engineering

BEng(CompSc) – Computer Science
 BEng(CE) – Computer Engineering
 BEng(EE) – Electrical Engineering

BEng(ElecE) – Electronic Engineering

BEng(ME) – Mechanical Engineering

BEng in Engineering Science

Selection of major option at the end of Year 1

[BEng(EngSc)] [JS6951]

JUPAS Interview January 2023 and June 2023

JUPAS

By December 7, 2022, choose HKU Engineering [JS6963/JS6951/JS6925/JS6248/JS6262/JS6937] as First Choice



Application is **now open** Interview for shortlisted candidates starts in **November 2022**

BEng in Biomedical Engineering [BEng(BME)] [JS6925]

Year 1 Engineering Core Courses

Year 2-4 Advanced Discipline Courses Declare Minor before Year 4

BASc in Financial Technology [BASc(FinTech)] [JS6248]

Year 1-2 FinTech Discipline Core Courses

Year 3-4 Advanced Discipline Courses Declare 2nd Major and/or Minor(s) before Year 4

BEng in Data Science and Engineering [BEng(DS&E)] [JS6262]

Year 1-2 Engineering and Discipline Core Courses

Year 3-4 Advanced Discipline Courses Declare 2nd Major and/or Minor(s) before Year 4

Global Engineering and Business Programme (which leads to Bachelor of Engineering / Bachelor of Engineering in Biomedical Engineering and Bachelor of Business Administration Double Degree) [GEBP] [JS6937]

Year 1 • BEng

Common Year 1 Programme Selection¹ at the end of Year 1

Year 2-4

BEng Programmes:

- BEng(CivE) Civil Engineering
- BEng(CompSc) Computer Science
- BEng(CE) Computer Engineering
- BEng(EE) Electrical Engineering
- BEng(ElecE) Electronic Engineering

Year 5

Study BBA on self-financing basis

- BEng(IELM) Industrial Engineering and Logistics Management
- BEng(ME) Mechanical Engineering
- BEng(BME) Biomedical Engineering

BEng(BME)

Engineering Core Courses

- Study 9 business courses from 5 major options
- Entrepreneurship, Design And Innovatior
- Finance
- Human Resource Management
- Information Systems And Analytics
- Marketing
- Declare 2nd Major² and/or Minor(s) before Year 4

¹There is a quota for each department; selection is based on the academic performance in Year 1.

² Only Computer Science students have room for a second major.

04

Environmental Engineering
 Declare 2nd Major and/or Minor(s) before Year 4

Materials Engineering

Systems Analytics

Flexible Programme Structure

The Bachelor of Engineering [JS6963], Bachelor of Engineering in Engineering Science [JS6951], Bachelor of Engineering in Biomedical Engineering [JS6925], Bachelor of Arts and Sciences in Financial Technology [JS6248], and Bachelor of Engineering in Data Science and Engineering [JS6262] are four-year broad-based, comprehensive and flexible engineering programmes while the Global Engineering and Business Programme (GEBP) [JS6937] is a five-year double degree programme which leads to a Bachelor of Engineering/Bachelor of Engineering in Biomedical Engineering and Bachelor of Business Administration Double Degree.



BEng/BEng(EngSc)/BEng(BME)

	No. of course(s)
University Requirements:	3
Language Enhancement Courses	6
Common Core Courses	
Engineering Core Courses*	5-7
Discipline Requirements: (including core, elective, capstone experience, internship, engineering training and free electives)	24-26
Total	40

- Calculus and ordinary differential equations Linear algebra, probability and statistics
- Fundamental mechanics

• Engineers in the modern world

- Electricity and electronics
- Computer programming I
- Computer programming II OR Thermofluid mechanics

BEng(DS&E)

	No. of course(s)
University Requirements: • Language Enhancement Courses • Common Core Courses	3 6
Engineering Core Courses*	4
Discipline Requirements: (including core, elective, capstone experience, internship and free electives)	27
Total	40

BASc(FinTech)

	No. of course(s)
University Requirements: • Language Enhancement Courses • Common Core Courses	2 4
BASc Core Courses	3
Discipline Requirements (including core, elective, capstone experience)	16
Free Electives/Second Major/Minor(s)	15
Tota	40

GEBP(Year 1 to 4[#])

	No. of course(s)
University Requirements: • Language Enhancement Courses	3
Common Core Courses	4
Engineering Core Courses*	5 - 7
Discipline Requirements (including core, elective, capstone experience, internship, engineering training and free electives)	24 - 26
Business courses from 5 major options	9
Total	47

[#] With regard to the courses to be taken in the fifth year, please refer to the Regulations and Syllabuses for the Degree of Bachelor of Business Administration (BBA) in conjunction with the Degree of Bachelor of Engineering or Bachelor of Engineering in Biomedical Engineering.

Major and Minor Options

Under the flexible structure, high-calibre students are allowed to pursue major/minor options in a variety of disciplines.

Major options

BEng(CompSc), BEng(EngSc), BASc(FinTech) and BEng(DS&E) students can opt for second major study in either another engineering discipline, or areas of study offered by other faculties, by completion of additional 12 to 16 courses in a second major option.



Year of s	tudy	BEng(CompSc) / BEng(EngSc) / BEng(DS&E)	BASc(FinTech)
Year	1	University and Engineering core courses	University and Discipline core courses
Year 2	2-4	Discipline courses and courses to fulfill second major options	

Minor options

Students can opt for minor study in either another engineering discipline, or areas of study offered by other faculties. In general, students have to complete 6 to 8 courses in a minor in addition to their study in the BEng programme.

Offering Faculties	Examples of	Examples of Minor Options		
Engineering	 Computer Science Data Science and Engineering Electrical and Electronic Engineering Environmental Engineering Geotechnical Engineering 	 Industrial Engineering and Logistics Management Innovation and Design Mechanical Engineering Urban Infrastructure Informatics 		
Arts	 French German Global Creative Industries Japanese Language 	Korean StudiesMusicSpanish		
Business and Economics	AccountingEconomicsFinance	 Human Resource Management Information Systems and Analytics Marketing 		
Science	 Actuarial Studies Chemistry Computational & Financial Mathematics Environmental Science 	 Mathematics Physics Risk Management Statistics 		
Social Sciences	 Cognitive Science Geography Journalism & Media Studies Sociology 			

HKU-Cambridge Undergraduate Recruitment Scheme (Engineering)

The "HKU-Cambridge Undergraduate Recruitment Scheme (Engineering)" (the Scheme) is a competitive scheme for high-calibre students with excellent academic credentials. Under the Scheme, selected BEng students will study at HKU for the first two years, and continue their studies at the University of Cambridge for their third to fifth year of studies. Upon successful completion of the five years of studies, students will be conferred the Master of Engineering and Bachelor of Arts (Honours) degrees by the University of Cambridge, and the Bachelor of Engineering degree by HKU.

* Only first year students studying for the BEng, BEng(BME), BEng(EngSc) and GEBP are eligible to apply for the Scheme. BEng(CompSc), BASc(FinTech) and BEng(DS&E) students are not eligible for the Scheme.

Dean's Club

First-year students with excellent academic result admitted to the Faculty of Engineering will receive invitation to join the Dean's Club. Members of the Club are personally mentored by the Dean of Engineering, and they will be invited to join various academic and social activities, connecting them with industry leaders and widening their exposure to different aspects of engineering. They will also receive the Dean's Award for Engineering Students to support their overseas exchange and experiential learning activities, so that they will be nurtured as future leaders with unique experience, outstanding visions and exceptional capabilities.





Tam Wing Fan Innovation Wing

FACULTY OF ENGINEERING

The transparent facade of Tam Wing Fan Innovation Wing carries an openness and vibrant atmosphere to foster innovations among teachers and students.

For interdisciplinary hands-on and experiential learning: Tam Wing Fan Innovation Wing

Practical hands-on and experiential learning activities are indispensable in engineering education nowadays. Tam Wing Fan Innovation Wing (Innovation Wing) is established to create an atmosphere of Creativity, Openness, and Vibrancy to foster interdisciplinary innovations among students and Faculty members in Engineering and Technology. Our drive for innovation is further backed by the University Grants Committee and a generous donation from Mr and Mrs Tam Wing Fan.

The two-storeyed Innovation Wing covers 2,400m² of floor area, which is located on the G/F and LG/F of the Hui Oi Chow Science Building, a strategic and prominent location at HKU. Situated next to the HKU MTR Station and the buildings of the Faculty of Engineering at the "heart" of the Main Campus, students and future engineers will have more opportunities to develop and actualise ideas, from the whiteboard to the real world, in this state-of-the-art facility.



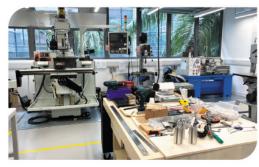
Brainstorming area



Dream Chamber



▲ Makerspace and assembling area



▲ Machine workshop



Electronic workbenches

Turn ideas into reality

Innovation Wing is equipped with comprehensive prototyping facilities and equipment for students to turn ideas into reality. The Makerspace offers a spacious assembling area that can accommodate more than 100 students to work on their hands-on projects. Surrounding the assembling area is a number of specialised workshops equipped with state-of-the-art digital controlled facilities such as 3D printing machines, laser cutting and engraving machines, waterjet cutting machine, measuring tools, hand/power toolsets and specialised electronic workbenches, etc. The digital innovation zone offers computer-aid design studios, multimedia and podcast studio, AR/VR studio and special project studios for supporting innovation with digital technology.

Inspiring advanced technology workshops

Innovation Wing houses a number of thematic workshops for advanced technologies and/or research outcomes from pioneer Engineering projects led by Professors/researchers in the Faculty of Engineering. Students can get in touch with advanced technologies and learn from Professors who are experts in related areas, and apply what they have learned to tackle the grand challenges in the world. For example, in the workshop about new and advanced materials, there is a research-grade 3D Printer that uses micro stereo lithography technology to produce highly precise parts with a resolution in micron scale.

Sparkling environment for disseminating ideas and achievements

Innovation Wing encourages knowledge exchange and peer learning. Poster hallway, project wall and social media sharing platform are set up for displaying and sharing inventions, ideas and achievements. A seminar stage with an LED wall is located next to a relaxing brainstorming area. Students can exchange ideas by giving technology talks, showcasing their inventive designs, and harnessing timely and constructive feedback from peers, Faculty members, and the public.

Contact No: 391 02388 Email: innowing@hku.hk Website: https://innowings.engg.hku.hk/innowing1/





FACULTY OF ENGINEERING

A hub of interdisciplinary research to catalyse the discovery of innovative and impactful engineering technologies:

Tam Wing Fan Innovation Wing Two

must be aware of humans and understand hu ons and motions to plan and achieve shared g



Tech Talk series



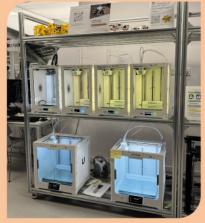


y fluids, such as blood, into

lions and trillions of droplets



Podcast studio



▲ 3D printers

Tam Wing Fan Innovation Wing Two (Innovation Wing Two) serves as an enabling platform for Engineering researchers to interact and collaborate synergistically with researchers across various disciplines to tackle grand challenges and deliver research outputs with a significant impact on Hong Kong and global communities.

Innovation Wing Two is located at G/F of Run Run Shaw Building and is connected with Innovation Wing One via a covered walkway. With a new phase added to the Innovation Wing, a holistic platform is formed to provide more opportunities in innovation education and research to researchers as well as undergraduate and postgraduate students from various disciplines.

A wide variety of research-related activities and initiatives, including exhibitions and weekly research talks, are conducted by Faculty members and their PhD students. These activities serve to enhance the engagement with the community and show the strength of the Faculty in research and attract interested academics and industry professionals for in-depth communications and collaborations. The state-of-the-art facilities allow the Faculty to advance its cutting-edge research fronts and expand its research network with academia and industry in the global context.

Email: innowingtwo@hku.hk

Website: https://innowings.engg.hku.hk/innowing2



Exhibitions

Innovation Academy Faculty of Engineering, HKU

A magnet for talents, a platform to stimulate: Innovation Academy

The Faculty of Engineering is committed to fostering contemporary engineering education for students to contribute to the industry and address the changing needs of the community. In keeping with this commitment, the Faculty has established the "Innovation Academy" to provide every student with the opportunities and intellectual inspiration to innovate and pursue their engineering passion.

The Innovation Academy is a hub for attracting and cultivating a new generation of talents, not only scholars and researchers but also industry leaders and influencers. It works like an accelerator for inspiration and implementation.

Inspirational programmes and activities

A series of programmes and activities are designed to capture three goals: **Inspire, Equip and Showcase**, and encourage a think-out-of-the-box mindset within students. We also engage professors, students and stakeholders like industry advisors.

InnoHub

In an increasingly complicated world, there is a high demand for well-rounded talents with holistic education who can comprehend and solve complex problems that transcend disciplines. InnoHub is dedicated to providing a platform to connect students from the ten faculties at HKU for cross-disciplinary collaboration and to prepare them for addressing the grand challenges of the world.

Pitching

It aims to provide students with opportunities to present their project ideas and recruit prospective teammates and academic advisors. The learning process helps to improve students' ability to effectively advocate an idea or project to a large group of audience. It also allows flexibility for students to form their own teams and grow their community of interest and passion.

Workshop on advanced technologies

The workshops create opportunities for active exchange and learning for the advanced technologies and/or research outcomes from pioneering Engineering projects in the Faculty of Engineering. Apart from academic staff, distinguished innovators, entrepreneurs, industry leaders, researchers and alumni are invited to give inspirational sharing on innovation-related topics and/or their success stories.



 InnoHub connects students from the ten faculties at HKU for cross-disciplinary projects.



 Students present their innovative ideas in the pitching event.



 Guest speakers of diverse backgrounds are invited to give inspirational sharing on innovation-related topics and their success stories.





▲ The Engineering Inno Show provides audience a better understanding on the development and results of varous student projects.

Student-initiated course

"Learning by teaching" helps to train students' confidence, organisational and communication skills. The Student-initiated course is a student-run experiential activity to design, develop and teach a course on a technology-related topic under the supervision of a Faculty Advisor. Students or student teams are welcome to propose class(es) of special interest which are not covered in the formal engineering curriculum.

InnoChallenge

It aims to encourage engineering participation in tackling pressing issues of the time for all HKU Engineering students. This problem-based programme develops students' competencies in acquiring and applying knowledge, problem-solving, teamwork, communication, and experimental skills. Professors who are experts in those fields are invited to provide training workshops.

Engineering Inno Show

It is a showcase carnival that celebrates and demonstrates the outcome of learning and creation at the end of every semester. Students can illustrate their inventive design, demonstrate their research and projects, harness constructive feedbacks from peers, Faculty members, industry experts and the public through knowledge exchange, and spin their ideas into innovative (re)inventions.



▲ The student-initiated courses are on Instructor-Attendee mode where students can claim credits either by serving as instructors of the courses or attending the courses, subject to the approval by the University's Horizons Office.



Funding scheme for student projects / activities by Tam Wing Fan Innovation Fund and Philomathia Foundation Innovation Fund

The scheme aims to identify, engage and nurture student projects/activities with the creative potential to tackle emerging complex engineering problems in the world. The funded projects/activities focus on out-of-classroom learning experiences with the aim of aligning with the vision and missions of the Faculty of Engineering and the Innovation Academy.

Email: innoacademy@hku.hk Website: https://innoacademy.engg.hku.hk/

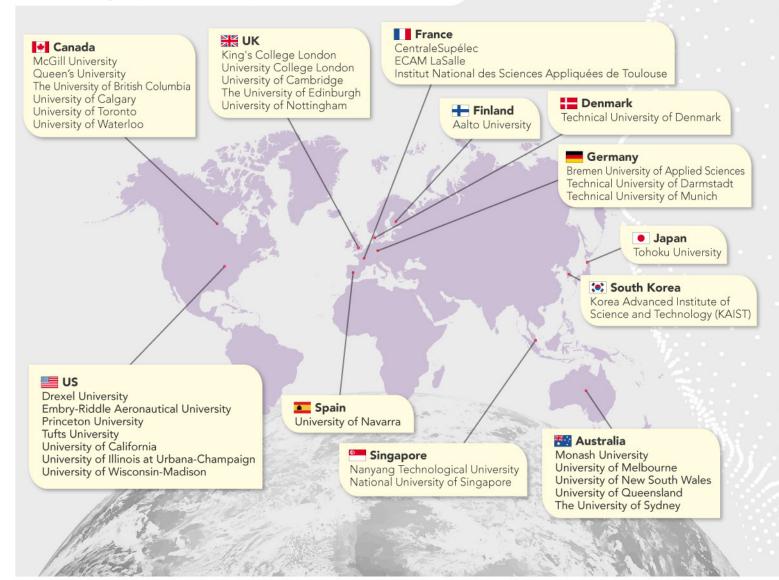


Student Exchange Programme

The Faculty of Engineering encourages students to join either the University-level or Faculty-level exchange programmes to study in prestigious institutions around the world for one semester or one academic year.



An average of 22% of engineering students are going abroad every year. Some examples of the universities are:



Tsang Wai Ho Ricco



BEng in Mechanical Engineering Princeton University, USA

The exchange experience at Princeton University is probably one of the most exceptional periods of my life. The Princeton Exchange Programme gives HKUers a chance to dramatically broaden their horizons. Voyaging halfway across the globe, we see the prosperous and the quaint, the beautiful and the unpretentious. Learning from the pinnacle of technology and acquainting friends from afar, one will undoubtedly return with the fruits of knowledge and the seeds of friendship.

Yeung Ho Lam



Molly Rathore



BEng in Biomedical Engineering The University of Sheffield, UK

I was particularly memorable with the lab sessions in biomedical instrumentation where we investigated how the visual stimulation through a VR headset influences the behaviour of electrocardiography (ECG).

Together with what I have learnt in Hong Kong, this exchange has greatly enriched my exposure to Biomedical Engineering, as well as many other aspects. I was really grateful to have this opportunity, especially during the pandemic.

BEng in Electrical Engineering HKU Worldwide Student Exchange Programme University of British Columbia, Canada

Professors at the University of British Columbia come from all across the world from different cultures and ethnicities. They paid attention to each and every need of students, from academic studies to students' personal needs. Besides, UBC's academic culture intensely focuses on continuous evaluation and class participation is highly encouraged.

Angel Woo



BEng in Computer Science & BBA (Major in Wealth Management), graduated in 2022 University of Tokyo, Japan

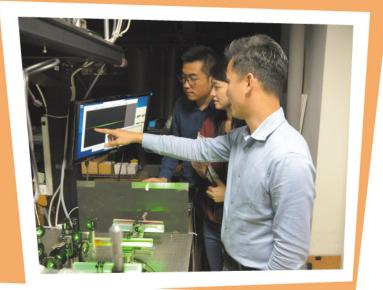
Taking part in the Airbus Japan Business Project, I worked with Aerospace Engineering students to design business models for airlines. We also had the opportunity to visit the Airbus office and learn more about applications of technology in aviation.

In addition, I am participating in the JAXA Satellite Design Contest and the Nikkei Stock League (a virtual stock market competition). I've been enjoying a fruitful university life much thanks to this programme.

Internship

Experiential learning is regarded as an integral part of student's learning experience, and internship / industrial training is the most important component of experiential learning, which is compulsory for most of BEng degree programmes.

Students normally spend six to eight weeks in the summer after their third year of study as internships.





Kong Tsz-ching, Erica BEng in Mechanical Engineering Internship at CLP Power

During my internship at CLP, I have been involved in tasks related to the upgrade of the condition monitoring system of the Black Point Power Station. I was able to apply my knowledge in thermodynamics learnt at HKU and understand the critical performance parameters of a generator unit that professional engineers pay attention to. I also had the chance to visit the power plant and attend technical seminars outside of my daily tasks. The internship provided me with valuable experience and I am very glad to return to CLP as a Graduate Trainee.

Wang Yunzhe

BEng in Engineering Science Summer Research Internship at Harvard John A. Paulson School of Engineering and Applied Science

The programme provides students with a chance to expand their horizon in various fields. I took courses about alloys, semiconductors, bio-materials, optical materials, and also selected curriculums in interested disciplines. The broad vision in multiple fields helps me a lot in research. During the research internship at Harvard, knowledge in physics and materials helped me get familiar with the topic quickly. In addition, this research experience taught me the importance of being an independent researcher.





Gautama Brianna

BEng in Biomedical Engineering Summer Internship at PhoMedics Limited

Interning at PhoMedics has been an enriching and invaluable experience. I learned a lot from my supervisors and peers and was given the opportunity to explore various areas of Biomedical Engineering (BME) by engaging in tasks from market research to deep learning. I also gained hands-on experience in image processing and deep learning, which are my main areas of interest. This internship has allowed me to gain deeper insights into the BME industry and have a better understanding of what a career in BME entails.

Mak Kai Yim

BEng in Biomedical Engineering Summer Internship at St. Paul's Hospital

Last summer, I worked at St. Paul's Hospital as a BME intern. Throughout the internship, I had the chance to work on a variety of hospital issues, mainly on practical tasks such as preventive and corrective maintenance of medical devices and documentation like purchase requisitions, contracts, and data entry. In addition, the experience enables me to work in various clinical departments, including the operating theatre, nursery, and isolation ward, where I can deal with emergencies and real-world issues while collaborating with medical professionals and patients. I am able to apply engineering and biomedical knowledge learnt in university, particularly during device maintenance and analysis. Overall, it was a valuable and rewarding experience that allowed me to better grasp what it would be like to work in the BME sector and nurture my desire to be a biomedical engineer in the future.





Mak Chak-wing BEng in Computer Science Internship at NVIDIA Singapore Pte Ltd

With NVIDIA, I have learned deep learning and machine learning from scratch to hatch. I have developed an end-to-end deep learning demonstration application, which includes provisioning infrastructure on the containerization platform and implementing the graphic user interface. Also, I have the chance to have a glimpse at academic research on data drifting and manifold learning. It was a memorable and challenging internship, helped me to find my pathway in the computer science field.

Yeung Wa

BEng in Industrial Engineering & Logistics Management Internship at the Airport Authority Hong Kong

My internship experience at The Airport Authority Hong Kong was extremely pleasant and rewarding. During my time there, I was responsible for supporting the operations of the Food Ordering System as well as the HKairport Shop. In addition, my teammates and I had the privilege of designing and developing an app to enhance customers' endto-end experience. All in all, my experience in conducting market research, user acceptance test, inventory tracking, as well as coordinating with vendors in system development, made me a more proficient and conscientious person.





Yuen Cheuk-heng

BEng in Computer Science Summer Internship at Bowtie Life Insurance Company Limited

It has been a fruitful experience working in Bowtie. I had the chance to not only try on new technologies like cloud computing, but to work with experienced Software Engineers and DevOpsSec Engineers who broadened my horizons about this industry. It is not something that can be learned from the lecture. I feel more prepared for my career.

15

Service learning

Apart from the internship, engineering students are encouraged to engage in social service and apply their professional knowledge to provide solutions to real world situations. The Department of Civil Engineering has established Project Mingde since 2003. Faculty members, students, and alumni engineers have participated in the feasibility study, planning, design and construction of eight

built facilities in Guangxi and Sichuan, China, namely Mingde Building; Gewu Building; Zhengdong Jie Kindergarten; Chaoyang Bridge; Mingde Pan Community and Cultural Centre; Jundi Building; Restoration of Tencun Bridge; and Restoration of Wangdong Bridge. There are five built facilities in Hanoi, Vietnam, namely Sanitation facilities at Tan Hung Secondary school; Library of Cuong Chinh Secondary School; Library of Trung Dung Primary School; Sanitation facilities at Trung Dung Secondary School; and Trung Dung Secondary School Swimming Pond. In addition, two other projects are now working in progress, they are Guigang Duling Primary School Restoration and Expansion in Guangxi; and Restoration of Saint Barnabas' Society and Home Centre in Hong Kong, which is the first local project through which students could help the elderly, the homeless and those in need in the community close to HKU main campus.









Leung Chun-hei

BEng in Civil Engineering Project Mingde – Vietnamese Secondary School Swimming Pond Construction Project 2019

By participating in Project Mingde, we have a better understanding on the construction process and building techniques, such as mixing cement mortar, plastering, tile-laying and suchlike. These practical skills were essential for engineering students in their future careers. Apart from learning how to build, we were given opportunities to communicate with the contractors and clients. Progress meetings were held to discuss the construction progress and problems encountered during the work. It was an adventurous and eye-opening experience for me.

Undergraduate Research Fellowship Programme

Students who are interested in research and development or pursuing an academic career can undertake research under the guidance and supervision of academics who have a strong research track record and experience in training research postgraduate students, either in HKU or in prestigious overseas institutions like Stanford University, University of Illinois at Urbana-Champaign, Imperial College London, University College London, University of California, Berkeley, The University of Sydney, National University of Singapore and Tsinghua University. Students who perform well under the programme will be considered for early admission to research postgraduate programmes at HKU.

Nirmani Nayanathara

BEng in Electronic Engineering Undergraduate Research Fellowship Programme at Stanford University, US

Joining the Undergraduate Research Fellowship Programme at the Stanford University truly opened my mind to the true impact that research could make and gave me a taste of what it would be like to pursue higher studies.



Integrated Study-Work Programme

Stanford MEDICINE

Students can take a 6- to 12-month full-time internship in the engineering industry to benefit from the on-the-job training as future professional engineers.

Capstone Experience

Capstone Experience focuses on the integration and application of knowledge and skills that students have acquired throughout their undergraduate studies. One of the capstone experiences for engineering students is the final-year-project.



Professional Preparation Programme

The Professional Preparation Programme aims at facilitating students to make informed career choices and broadening their knowledge in the job market, and enhancing students' employability. Students will be equipped with techniques in writing curriculum vitae and attending interviews, as well as nurturing better social networking and communication skills.



17 ►

Student Achievements

At HKU Engineering, we focus on nurturing the developments of all-rounded students. Students are encouraged to acquire hands-on experience and equip themselves with a global outlook. Many of them performed remarkably well in local and international competitions.





Grand Prize (Category I – An Invention) of the HKIE Innovation Award 2021 (Young Member Group)



Race Tech William Kimberley Award in the Formula Student UK 2022 Concept Class competition



Top 10 Outstanding Tertian Student of Hong Kong 2022



Champion of the "Green Energy Dreams Come True" Competition



Champion of The ICE HKA G&S Model Building Competition



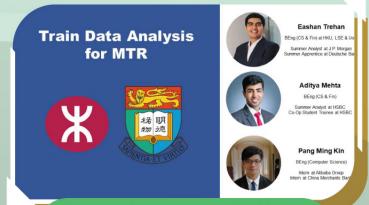
Champion of The HKIE Enginpreneurs Award 2021 – Young Innovators



World Champion of 2020 Micro Imagine Cup



Champion of the 9th Greater China Design Competition



Champion at the Young Professionals Exhibition & Competition 2020



Winner of The University Pitch Competition on Global Grand Challenges 2021-22



First runner-up at Global Grand Challenges Summit 2019 in London



An Engineering student project team set the Guinness World Record "The fastest 50m Swim by a Robotic Fish" for the second time



1st Runner Up in PwC's HackaDay 202



Champion of the CILTHK Student Day 2022 Competition



Best ever result of Hong Kong teams at the 23rd AIAA Design Build Fly Competition in the U.S.A.

BEng in **Civil Engineering**

Civil Engineering is the science and art of utilising natural resources and power for the beneficial use of mankind. Civil Engineers are responsible for the design, construction and safe-keeping of our infrastructure and built environment. They ensure that our buildings, roads and bridges are safe and effective, our slopes are safe from failures, our stormwater drainage systems are adequate to prevent flooding, our wastewater are collected, and treated properly to protect our environment, and all components of our infrastructure are functioning in a safe, comfortable and sustainable manner.

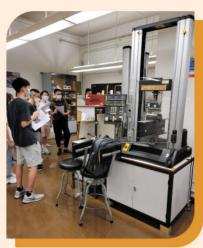
The 4-year programme provides students with the academic qualification towards the professional status of a Civil Engineer. The Main Subject Areas of studies included:

- **1. Construction Management**
- 2. Environmental Engineering (e.g. wastewater treatment, solid waste treatment)
- **3. Geotechnical engineering** (e.g. engineering geology, soil mechanics, foundation design)

4. Structural engineering (e.g. analysis and design of concrete and steel structures)

5. Transportation Engineering





Department of Civil Engineering



Contact No: (852) 3917 2286 Email: civdept@hku.hk Website: https://www.civil.hku.hk/ FOCUS of the programme:

Students may organise their study of disciplinary elective courses to specialise in one of the following focuses:

- Environmental Engineering
- Smart Transport and Logistics

• Urban Informatics

Career Prospects:

Most of our graduates are employed by:

- Works Departments in the HKSAR Government
- Consultant Firms
- Construction Companies
- Developers





Cameron van Breda Co-founder and CEO, Hollo HKU Molecular Biology & Biotechnology & Science Entrepreneurship Student

Piyush Jha Co-founder and CTO, Hollo HKU Computer Science Student



Ajit Krishna Co-founder and CIO, Hollo HKU Computer Science Student

FOCUS of the programme:

Students may organise their study of disciplinary elective courses to specialise in one of the following focuses:

- Al & Robotics courses cover intelligence systems, machine learning, and robotics.
- **Big Data Analytics** courses focus on data analytics and the application of big data.
- CyberSecurity courses focus on cryptography, cyber attack and defence, applications of blockchain and computer forensics.
- Financial Computing courses focus on the technologies and their applications in the finance and business domain.
- System & Networking courses cover the design and implementation of computer hardware, software, and distributed systems.
- Theoretical Computer Science courses focus on mathematical aspects of computing and are more on theory than practice.

BEng in Computer Science

The BEng(CompSc) programme is a programme that offers a solid education in the fundamental and essential areas of computing. It is a timely and practical curriculum that is essential for aspiring students and future IT professionals. Upon completion of this curriculum, students will be well-equipped with both basic and advanced knowledge in computer science, which aims to better prepare students to launch their careers in the IT industry and/or to pursue postgraduate studies in this area.

Computer science is a fast-growing discipline. Its importance is evident in the profound impact that the use of computers has on our lives. Computer science education is now as indispensable as any of the traditional programmes in any established university.

Highlights of the programme:

Flexibility – Students can use elective credits to satisfy a second major or a minor programme.

Research opportunities – Outstanding students will have the opportunities to undertake research projects supervised by renowned professors.

Capstone Experience - Students have to join an internship in the industry and work on a final project which could be a research-based or software-development or industry-based project.

Career Prospects:

Computer Science graduates are very employable, not just for IT jobs but for other analytical roles too. The problem-solving skills and analytical abilities that our graduates developed during their undergraduate study proved to be very valuable in many areas of endeavour.

Examples include IT professionals in different sectors of society, say banking & finance, building & construction, the government, education, IT & telecommunication, property, and manufacturing, etc.

Department of Computer Science



Contact No: (852) 2859 2180 Email: enquiry@cs.hku.hk Website:

https://www.cs.hku.hk/programmes/beng-compsc/admission

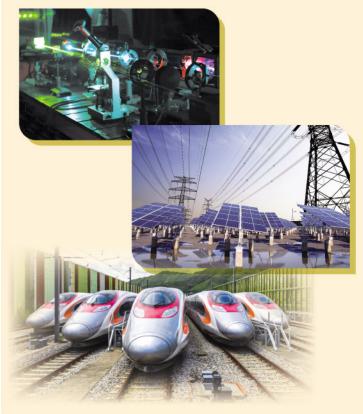
ппг

---⊙---⊙---

BEng in

Computer Engineering/ Electrical Engineering and Electronic Engineering

Electrical and Electronic Engineering (EEE) is a broad engineering field consisting of a wide range of sub-fields such as microelectronics, computers, power engineering, telecommunication, control systems, and signal processing. The Department of EEE offers 3 bachelor's degree programmes focusing on different sub-fields.



Career Prospects:

- Government, Transportation and Public Utilities
- Technology and Finance Companies
- Further Studies

Department of Electrical and Electronic Engineering



Contact No: (852) 3917 7093 Email: undergrad-admission@eee.hku.hk Website: https://www.eee.hku.hk

FOCUS of the programme:

Computer Engineering (CE) (jointly offered by EEE and CS) **Ambient Computing:** Reconfigurable computing/ Energy-efficient computer architecture

Big Data Processing: Data engineering/ Machine intelligence

Robotic & Autonomous Systems: Humanoid robots / Autonomous machines

Electrical Engineering (EE)

Smart Power Systems: Power systems / Renewable energy / Smart grids **Modern Electric Transportation:** Electric railways / Electric vehicles / Industrial Applications **Intelligent Built Environment:** Energy-efficient lighting / Smart buildings

Electronic Engineering (ElecE)

Nanoelectronics: Circuits & IC design / Fiber optics / Imaging / Biophotonics Next-generation communications: WiFi / 5G 6G / Internet of things/ Cloud networks Data and AI systems: Multimedia signals & applications / Electronic commerce / Data analytics



22

BEng in Industrial Engineering and Logistics Management



FOCUS of the programme:

- Logistics Engineering
- Smart Transport and Logistics
- Systems Analytics

Career Prospects:

- Banking and Finance
- Consultancy
- Logistics and Transport
- Services and Manufacturing



BEng(IELM) focuses on technology and management tools which integrate the whole lifecycle of product and service design and development, procurement, operations, and logistics from raw materials to customer satisfaction. This programme aims at developing students' ability to acquire the relevant skills for the global business environment, together with an integrated view towards problem solving in industrial, logistics and service systems.

<u>ର୍ପ୍</u>

JS6963

Students will learn not only to work as good team players, but also to acquire an understanding of value-adding business activities and the necessary entrepreneurial skills to identify potential opportunities for organisations. Graduates of this programme are expected to have a keen awareness of career growth, challenges and opportunities, as well as a strong desire to be future leaders who are achievement-oriented and far-sighted.



Department of Industrial and Manufacturing Systems Engineering



Contact No: (852) 3917 2586 Email: imse@hku.hk Website: https://www.imse.hku.hk

BEng in Mechanical Engineering

Mechanical Engineering plays a vital role in all engineering systems that involve moving parts, such as aeroplanes, building ventilation, automobile, medical equipment, power plants, robots, to name just a few. Mechanical engineers invent, design, analyze, operate and develop mechanical systems; they are trained to cope with a variety of challenges and have a very broad career spectrum.

The Department offers choices of guided electives in biomechanical engineering, building services engineering, energy engineering, environmental engineering, materials science & engineering and of course, the other general mechanical engineering subjects.





Department of Mechanical Engineering



Contact No: (852) 3917 2635 Email: mech@hku.hk Website: https://www.mech.hku.hk/



FOCUS of the programme:

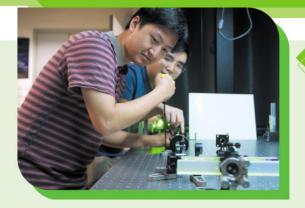
Students may organise their study of disciplinary elective courses to specialise in one of the following focuses:

- 1. Robotics, Drones and Control
- 2. Aerospace Engineering
- 3. Intelligent Built Environment
- 4. Materials Science and Engineering
- 5. Energy and Environmental Engineering

Career Prospects:

- Manufacturing
- Transport & public utilities
- Building, construction & consulting firms
- Government
- Finance and insurance







Career Prospects:

- Global or local biotechnology/ medical technology related companies
- Universities
- Hospitals
- Public sector
- Start-up
- Further studies (Master or PhD degrees) in Hong Kong or overseas.



BEng in Biomedical Engineering

The BEng(BME) degree is offered by the Faculty of Engineering in conjunction with LKS Faculty of Medicine at the University of Hong Kong. The goal of this programme is to cultivate the next generation of engineers who will play an integral role in improving health and quality of life through engineering designs/principles and technological innovations. Built upon a strong interdisciplinary foundation across basic sciences, mathematics, engineering and life sciences, this programme covers a wide scope of modern BME disciplines and a variety of BME-related experiential learning opportunities. Such inclusive training allows students to learn how to apply engineering principles to advance biomedical practices and research; and to establish professional, ethical and social responsibilities on health-related issues.

FOCUS of the programme:

Students may organise their study of disciplinary elective courses to specialise in one of the following focuses:

- Advanced biomedical signals and systems
- Biomaterials and tissue engineering
- Biomechanics and biotransport
- Biomedical imaging technologies and applications
- Omics technologies



Biomedical Engineering Programme



Contact No: (852) 3917 2803 Email: bmeengg@hku.hk Website: https://www.engineering.hku.hk/bmeengg/

BEng in Engineering Science

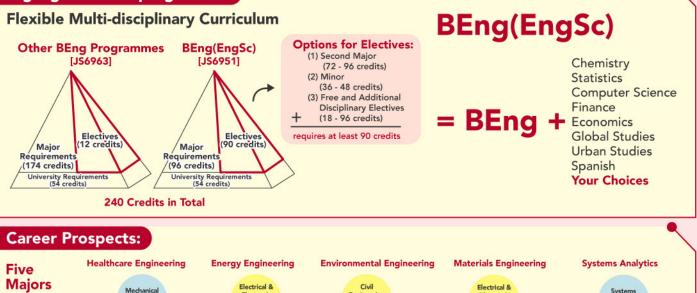


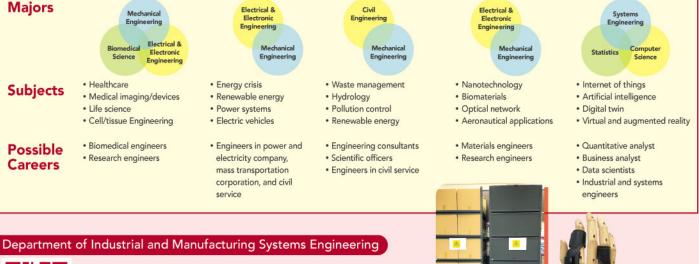
The BEng in Engineering Science programme is a unique science-based programme that aims at preparing future engineers and leaders of innovation who have the solid engineering skills and in-depth interdisciplinary knowledge needed to take on many of the global challenges that humankind faces.

This programme adopts a major/minor structure in which students select one of the five majors, and then pursue a second major in one of the remaining four majors; or a second major and/or minor(s) offered by the Faculty of Engineering or other faculties.

This programme is a special programme of HKU Engineering, and it is the most flexible programme in the Faculty of Engineering. This is a multi-disciplinary programme providing wide range of career prospects to nurture future leaders of innovation. Because of the small cohort size with professors pooled from all engineering departments, students are likely to build a strong network for their professional development.

Highlights of the programme:





Contact No: (852) 3917 2586 Email: engsc@hku.hk Website: https://www.imse.hku.hk/beng/beng-engsc

26





Highlights of the programme:

Interdisciplinary Knowledge and Skills – includes subjects on computing, finance, policies and regulations, and cross-disciplinary courses.

Scholarships in FinTech – the HKU-SCF FinTech Academy offers up to eight entrance scholarships, each at the value of \$50,000 and renewable up to \$200,000, exclusively for BASc(FinTech) students with outstanding academic performance.

Enrichment and Research Opportunities – offered by HKU-SCF FinTech Academy.

Internship Schemes with Industry



BASc in Financial Technology

The BASc(FinTech) degree programme, which is hosted by the Department of Computer Science, is one of the six BASc programmes that aim at nurturing future leaders with interdisciplinary knowledge and skills to address the contemporary and future challenges of the ever-changing world.

The main objective of the programme is to nurture financial technologists and entrepreneurs with essential knowledge in finance, technology, and regulations for taking up a leadership role in innovation and applications of Financial Technology. The programme combines subjects on computing, finance, and policies and regulations to give students a thorough grounding in the FinTech discipline. Besides discipline focus courses, students are required to take three cross-disciplinary courses that focus on leadership training, the foundation of knowledge, and data analysis. Moreover, there will be internship opportunities for students to put theory into practice.

FOCUS of the programme:

FinTech Focus with Essential Legal Studies:

Students have to take at least two legal subjects offered by the Faculty of Law that are related to finance and technology.

Career Prospect:

Graduates of this programme are expected to become FinTech professionals, leaders in the FinTech industry, and researchers in the FinTech discipline. They could take up a wide range of positions in FinTech, IT, finance, and regulatory compliance, or even have their own start-ups. The finance and IT industries have a wide range of jobs for this talent group such as blockchain developer, apps developer, compliance expert, cybersecurity analyst, etc.

Some may choose to continue their studies by pursuing a master or doctoral degree in Hong Kong or overseas.

Department of Computer Science



Contact No: (852) 2859 2180 Email: enquiry@cs.hku.hk Website: https://www.cs.hku.hk/fintech-home

BEng in Data Science and Engineering

Fast emerging data science and engineering technologies such as data analytics, artificial intelligence, and big data infrastructure boost the transformative impact of big data on businesses, industries and society.

The BEng(DS&E) programme is a professional degree in Data Science and Engineering offered by the Department of Computer Science, with support from the Department of Statistics and Actuarial Science, Department of Mathematics, and Faculty of Law.

The curriculum is built upon a fine combination of foundation courses in data science, computing, mathematics, statistics, and law, and is designed to provide students with advanced training in both theory and practice in Data Science and Engineering. It is also unique in its emphasis on data privacy, ethical and legal issues for the data science profession, and privacy-preserving techniques. Students may also pursue a minor in a data-intensive field, thus bridging domain-specific knowledge with data science and engineering skills.

Career Prospects:

- This programme is built to nurture professionals equipped with core knowledge and technologies in data science and practical training in data engineering, and capable and passionate in driving different disciplines to excel in the era of big data. It provides a solid foundation for students pursuing career and research in the data science discipline.
- The programme gives students a new and exciting career choice in the fastest-growing job positions like data engineer/architect, data scientist, data analyst, machine learning engineer, big data engineer, business analyst, and information security analyst.

Department of Computer Science



Contact No: (852) 2859 2180 Email: enquiry@cs.hku.hk Website: https://www.cs.hku.hk/datasce



FOCUS of the programme:

Privacy-awareness: Students will be equipped with data security knowledge, in connection with the protection of data privacy.

DATA

Data-centric techniques: Various analysis techniques for different types of data (e.g. imaging data, IoT data, and diverse data obtained from the Internet of Everything (IoE)) will be introduced.

Domain-specific minors and capstone experience: We provide an option for students to take a minor in a specific domain, e.g., GIS in Geography, BIM in architecture, and biomedical data analysis. Students will demonstrate their data science skills and how data science can benefit a selected domain through the capstone project.



Global Engineering and Business Programme

(which leads to a Bachelor of Engineering/Bachelor of Engineering in Biomedical Engineering and Bachelor of Business Administration Double Degree)

Bachelor of Engineering/ Bachelor of Engineering in Biomedical Engineering
--

University and Engineering core courses

- University and Engineering disciplines courses
- Civil Engineering
- Computer Engineering Electrical Engineering
- Computer Science
- Electronic Engineering
 Industrial Engineering and Logistics Management
- Mechanical Engineering
 Biomedical Engineering

Complete Engineering programme requirements and receive BEng degree

The Faculty of Engineering and the HKU Business School jointly offer a Global Engineering and Business Programme (JS6937). Students can receive two degrees, namely Bachelor of Engineering and Bachelor of Business Administration after the completion of five years of study at HKU.



Career Prospects:

The majority of BEng graduates will work in the engineering sector, with other students serving the societies in the business, education, social and community sector. Around 16% of the BEng graduates will pursue further studies in Hong Kong or overseas. At the same time, as BBA graduates, students can also pursue a career in fields such as accounting, advertising, banking, brand management, customer relationship management, finance, human resource management, information systems, investment, marketing research and marketing management.

Bachelor of Business Administration

JS6937

Study 9 business courses from 5 major options:

- Entrepreneurship, Design and Innovation (Candidates must undergo a selection process arranged by the Programme Coordinator of EDI)
- Human Resource Management Finance
- Year **2-4** • Information Systems and Analytics (Major in ISA is not open to candidates of BEng in Computer Science)
 - Marketing

Year 5 Study BBA on self-financing basis and receive BBA degree



Highlights of the programme:

- This is an interdisciplinary programme in which students will acquire professional knowledge in both Engineering and Business in a global perspective.
- Students will undertake the first four years of study focusing in BEng or BEng(BME) curriculum, with a number of courses in Business. On successful completion of the degree of BEng or BEng(BME) with Second Class Honours and the prescribed Business courses, students may proceed to the fifth year of study leading to the degree of BBA, in one of the following majors:
- Major in Entrepreneurship, Design and Innovation (Note: Candidates must undergo a selection process arranged by the Programme Coordinator for EDI)
- Major in Finance
- Major in Human Resource Management
- Major in Information Systems and Analytics (Note: Major in ISA is not open to candidates of BEng in Computer Science)
- Major in Marketing

Faculty of Engineering



Tel: (852) 3917 2803 Email: enggugad@hku.hk

Website:

https://www.ugadmissions.engg.hku.hk/gebp

Admissions Requirements





JUPAS Route

Minimum entrance requirements to HKU Engineering:

BEng Programmes [JS6963], BEng(BME) [JS6925]

HKDSE Subject	Level
Core Subject	
English	3
Chinese	3
Mathematics	3
Liberal Studies	2
Elective Subject	
Physics/Combined Science with Physics component	3
Another elective subject	3

Level 3 in Extended Module 1 or 2 of Mathematics is preferred but not required.

BASc(FinTech) [JS6248]

HKDSE Subject	Level
Core Subject	
English	4
Chinese	3
Mathematics	3
Liberal Studies	2
Elective Subject	
Another 2 elective subjects	3

Candidates with level 4 in English Language, if admitted, will be required to take 6 additional credits in Core University English to complete their degree studies.

BEng(DS&E) [JS6262]

HKDSE Subject	Level
Core Subject	
English	3
Chinese	3
Mathematics	3
Liberal Studies	2
Elective Subject	
Extended Module 1 or 2 of Mathematics	3
Another elective subject	3

GEBP (i.e. BEng/BEng(BME) & BBA Double Degree) [JS6937]

HKDSE Subject	Level
Core Subject	
English	4
Chinese	3
Mathematics	4
Liberal Studies	2
Elective Subject	
Physics/Combined Science with Physics component	3
Another elective subject	3

Level 3 in Extended Module 1 or 2 of Mathematics is preferred but not required.

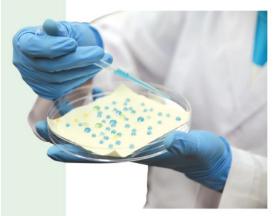
BEng(EngSc) [JS6951]

HKDSE Subject	Level	
Core Subject		
English	3	
Chinese	3	
Mathematics	3	
Liberal Studies	2	
Elective Subject		
Chemistry/Combined Science/ Biology/ Physics/ Integrated Science	3	
Another elective subject	3	

Level 3 in Extended Module 1 or 2 of Mathematics is preferred but not required.

30

Non-JUPAS Route



Applicants with other local/international/national qualifications will be considered on an individual merit basis. Applicants for BEng, BEng(BME) and GEBP are required to have good grades in Mathematics and Physics; applicants for BEng(EngSc) are required to have good grades in Mathematics and Biology/ Chemistry/ Physics; and applicants for BASc(FinTech) and BEng(DS&E) are required to have good grades in Mathematics. Examples of some common qualifications are:

- GCE A-Level
- International Baccalaureate (IB)
- India Board Examination
- STPM/UEC under the Malaysian examination system
- Indonesian Examination System
- Canada Provincial Examinations
- SAT/Advanced Placement (AP) Test under the US system
- Associate Degree/Higher Diploma

Direct Admissions Scheme (DAS)

Local graduates/final-year students of a recognised full-time Associate Degree (AD) or Higher Diploma (HD) programme at Hong Kong institutions are welcome to apply for admissions to the third year of BEng programmes in the DAS.





Engineering Society, which was established in 1913, is the oldest faculty-based society at the University of Hong Kong. Engineering Society has always been an important part of the Faculty. Apart from that, every engineering student is a member of the Society.

Engineering Society acts as a bridge between all engineering students, the Society and the Faculty. The Society also aims to serve all members through diverse activities and comprehensive welfare. From its earliest days, the Society was instrumental in building links with the industry and engineering professionals in Hong Kong.

Inheriting this tradition, Engineering Society organises regular activities for members both for academic and recreational purposes. The Society also maintains strong links with professional bodies such as the Hong Kong Institution of Engineers.



Executive Committee of the Engineering Society, Session 2022-2023



Engineering beelety

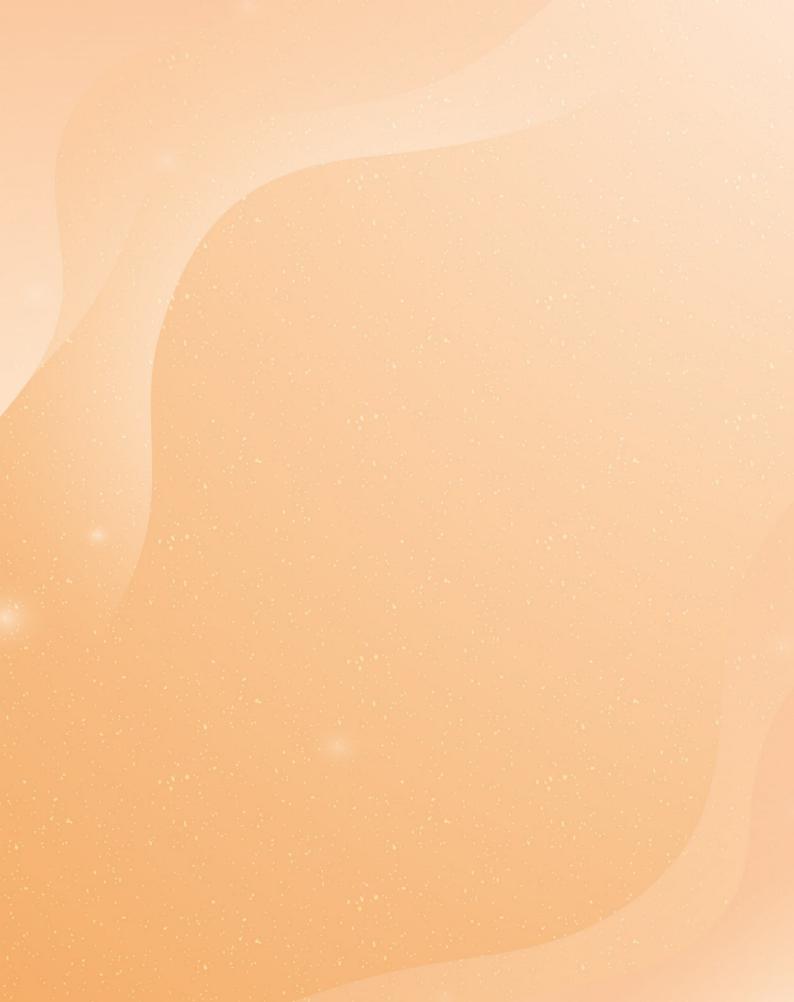
Contact



Email: enginsoc@hku.hk



The society room of Engineering Society is in LG101, Composite Building. Engineering students can enjoy their time and purchase society products there.





Room 501, Haking Wong Building The University of Hong Kong Pokfulam Road Hong Kong

🖀 : (852) 3917 2803

- enggfac@hku.hk
 thtps://engg.hku.hk
 Faculty of Engineering, HKU
- : hku_engineering
 : HKU Engineering