



Faculty of Engineering
THE UNIVERSITY OF HONG KONG

創新思維 港大工程

Innovative Thinking
HKU Engineering



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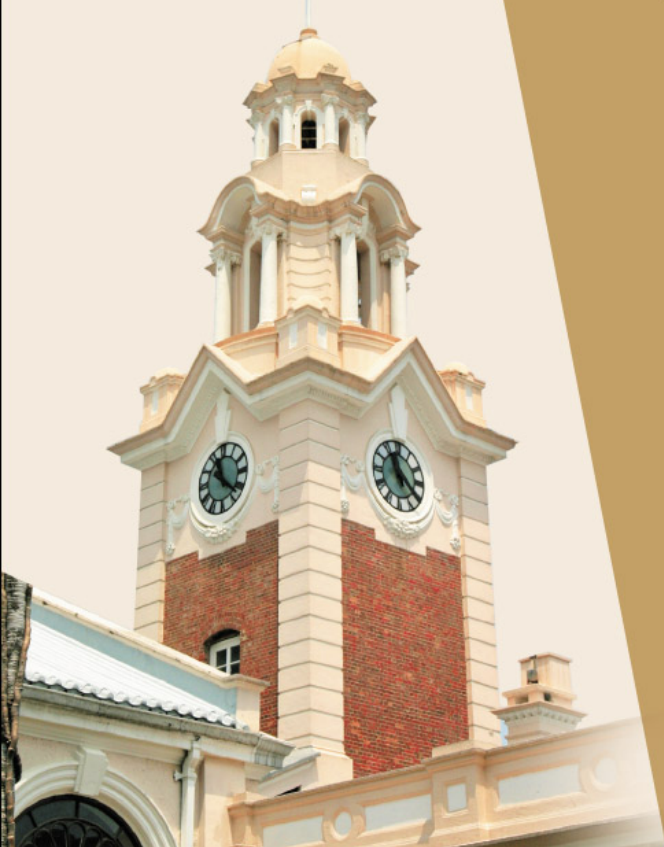
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^Subject to final approval

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 2020. We have graduated the most engineers in Hong Kong with a strong network of **20,000+** alumni.



We have

4 Chinese Academy of Engineering (CAE) Academicians
(50% of sector total)

and

13 Chinese Academy of Sciences (CAS) Academicians
(41.9% of sector total)

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

We admit the **Best Students**

We excel in **Research**

We create a campus of diversity and **International Outlook**

Largest non-local students headcount

Largest outgoing exchange students headcount

of any UGC-funded institution.

We stand with the **Top Universities** in the world

HKU ranked

1st

in Hong Kong

4th

in Asia

30th

in the world

Source: Times Higher Education (THE) World University Rankings 2022 and Asia University Ranking 2021

HKU ranked

1st

in Hong Kong

4th

in Asia

22nd

in the world

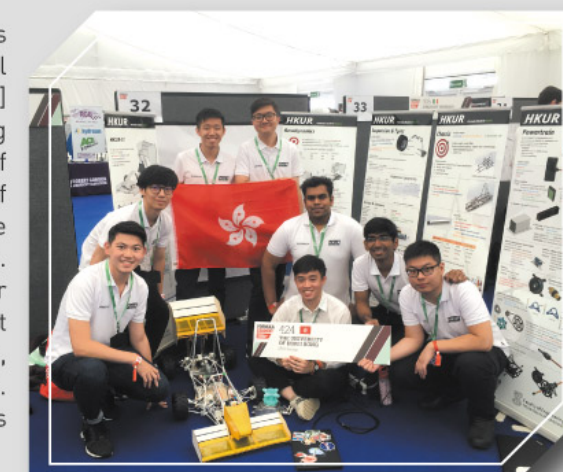
Source: Quacquarelli Symonds (QS) World University Rankings 2022



Professional Recognition

Like Law, Medicine and Dentistry, studying for 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 Bachelor of Engineering/Bachelor of Engineering in Biomedical Engineering and Bachelor of Business Administration [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 recognized 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.

HKIE THE HONG KONG INSTITUTE OF ENGINEERS
香港工程師學會



Apply to HKU!

Comprehensive and Flexible Engineering Programmes

BEng Programmes (Common Code Admissions) [BEng] [JS6963]

Common Year 1
"Programme" Selection¹ at the end of Year 1

Year 2-4

Programmes:

- BEng(CivE) – Civil Engineering
- BEng(CompSc) – Computer Science
- BEng(CE) – Computer Engineering
- BEng(EI) – Electrical Engineering
- BEng(ElecE) – Electronic Engineering
- BEng(IELM) – Industrial Engineering and Logistics Management
- BEng(ME) – Mechanical Engineering

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

HD/AD holders may apply to enter Year 3 directly

BEng in Engineering Science [BEng(EngSc)] [JS6951]

Year 1
Selection of major option at the end of Year 1

Year 2-4

Major options:

- Healthcare Engineering
- Energy Engineering
- Environmental Engineering
- Materials Engineering
- Systems Analytics

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(EI) – Electrical Engineering
- BEng(ElecE) – Electronic Engineering
- BEng(IELM) – Industrial Engineering and Logistics Management
- BEng(ME) – Mechanical Engineering
- BEng(BME) – Biomedical Engineering

Year 5
Study BBA on self-financing basis

JUPAS Interview January 2022 and June 2022

JUPAS

By December 8, 2021, choose HKU Engineering [JS6963/JS6951/JS6925/JS6248/JS6262^/JS6937] as First Choice

Non-JUPAS

Application is now open
Interview for shortlisted candidates starts in mid-December 2021

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
Engineering and 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

Study 9 business courses from 5 major options

- Entrepreneurship, Design And Innovation
- Finance
- Human Resource Management
- Information Systems And Analytics
- Marketing

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

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)

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

* Engineering Core Courses include:

- Calculus and ordinary differential equations
- Fundamental mechanics
- Engineers in the modern world
- Computer programming II OR Thermofluid mechanics
- Linear algebra, probability and statistics
- Electricity and electronics
- Computer programming I

BEng (DS&E)^

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

^Subject to final approval

BASc(FinTech)

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

GEBP (Year 1 to 4#)

University Requirements:	No. of course(s)
• 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.

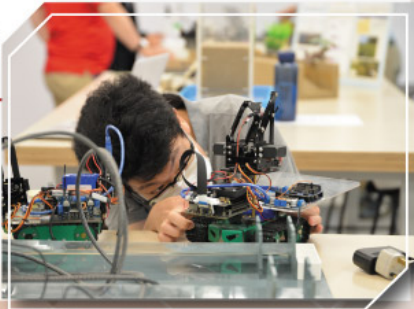
Year of study	BEng(CompSc) / BEng(EngSc) / BEng(DS&E)^	BASc(FinTech)
Year 1	University and Engineering core courses	University and Discipline core courses
Year 2-4	Discipline courses and courses to fulfill second major options	

^Subject to final approval

Minor options

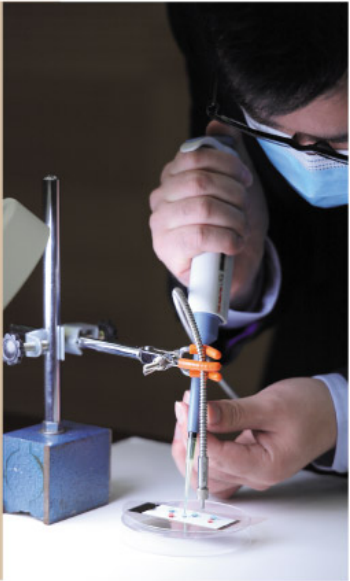
Students can opt for minor study in either another engineering discipline, or areas of study offered by other faculties. In general, students have to complete 6 to 8 courses in a minor in addition to their study in the BEng programme.

Offering Faculties	Examples of Minor Options	
Engineering	<ul style="list-style-type: none">Computer ScienceData Science and EngineeringElectrical and Electronic EngineeringEnvironmental EngineeringGeotechnical Engineering	<ul style="list-style-type: none">Industrial Engineering and Logistics ManagementInnovation and DesignMechanical EngineeringUrban Infrastructure Informatics
Arts	<ul style="list-style-type: none">FrenchGermanGlobal Creative IndustriesJapanese Language	<ul style="list-style-type: none">Korean StudiesMusicSpanish
Business and Economics	<ul style="list-style-type: none">AccountingEconomicsFinance	<ul style="list-style-type: none">Human Resource ManagementInformation Systems and AnalyticsMarketing
Science	<ul style="list-style-type: none">Actuarial StudiesChemistryComputational & Financial MathematicsEnvironmental Science	<ul style="list-style-type: none">MathematicsPhysicsRisk ManagementStatistics
Social Sciences	<ul style="list-style-type: none">Cognitive ScienceGeographyJournalism & Media StudiesSociology	



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.



HKU-Cambridge Undergraduate Recruitment Scheme (Engineering and Computer Science)

The "HKU-Cambridge Undergraduate Recruitment Scheme (Engineering and Computer Science)" (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. BASc(FinTech) students are not eligible for the Scheme.



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. HKU Faculty of Engineering has established Tam Wing Fan Innovation Wing (Innovation Wing), a new iconic landmark with one of the best maker spaces in Hong Kong and in Asia, for creating an atmosphere of Creativity, Openness, and Vibrancy to foster interdisciplinary innovations among students and teachers 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, where the University Street connects the original and the new parts of the HKU Main Campus. 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.

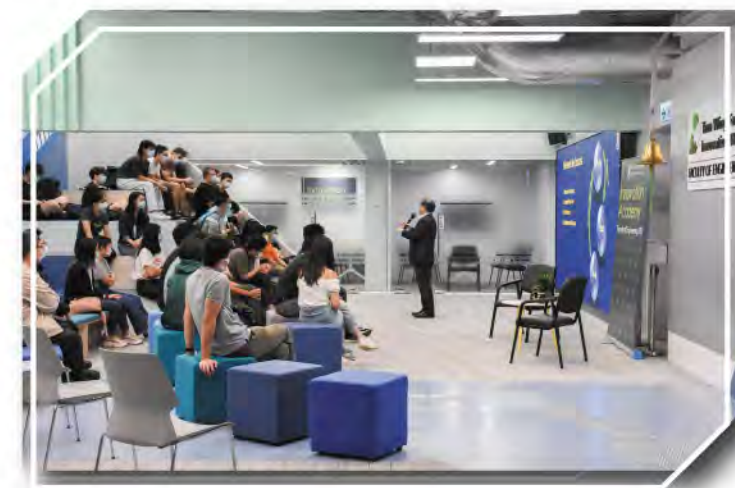


Turns idea into reality

Innovation Wing is equipped with comprehensive prototyping facilities and equipment for students to turn ideas into reality. The maker space offers a vibrant 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 the 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 electronic workbenches, etc. The digital innovation zone offers computer-aid design studio, multimedia and podcast studio, AR/VR studio and special project studios for supporting innovation with digital technology.

Inspiring advanced technology workshops

Innovation Wing also 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. Workshops with the themes related to healthcare technology, artificial intelligence and robotics, advanced and new materials, smart technology for better living and VR technology etc. are set up in the Innovation Wing. Students have the chance to get in touch with the advanced technology and learn from the Professors who are experts in related areas and apply what they have learnt 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 projection 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 sharing of ideas and peer learning. Poster hallway, project wall and social media sharing platform are set up for displaying and sharing of inventions, ideas and achievements. A seminar stage with LED wall is located next to a relaxing brainstorming area, and students can exchange ideas by giving technology talks, showcasing their inventive design, and harnessing timely and constructive feedback by peers, teachers, and the public.

Website:
<https://innowings.engg.hku.hk>



Innovation Academy

Faculty of Engineering, HKU

HKU Faculty of Engineering is committed to fostering contemporary engineering education for students to contribute to the industry and addressing 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 new generation of talents, not only scholars and researchers, but also industry leaders and influencers. It works like an accelerator for inspiration and implementation.

A magnet for talents, a platform to stimulate.



Inspirational programmes and activities

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

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.

InnoHub

In an increasingly complicated world, there is a high demand of 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

This pitching event 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 team and grow their community of interest and passion.

Sharing by innovators

Guest speakers of diverse backgrounds, such as innovators, entrepreneurs, industry partners, researchers or alumni, are invited to share their insights on innovation-related topics and successful stories. The format of the sharing is flexible spanning from talks to one-on-one dialogue to panel discussion.



Workshop on advanced technologies

Tam Wing Fan Innovation Wing houses a number of thematic workshops for advanced technologies and/or research outcomes from pioneering Engineering projects in the Faculty of Engineering. The concept is borrowed from writer-in-residence to create opportunities for active exchange and learning.

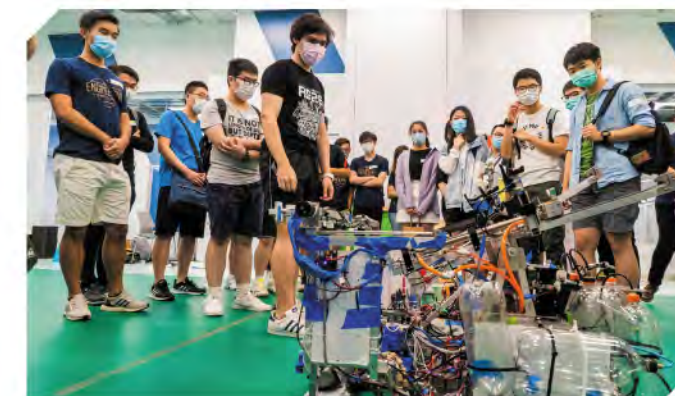


Student-initiated Course

"Learning by teaching" helps to train up students' confidence, organizational 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. Student or student teams may propose courses of special interest which are not covered in formal engineering curriculum.

InnoShow

The Engineering InnoShow 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, teachers, industry experts and the public through knowledge exchange, and spin their ideas into innovative (re)inventions.



Funding Scheme for student projects and activities

The Funding Scheme for student projects/activities by Tam Wing Fan Innovation Fund and Philomathia Foundation Innovation Fund aims to identify, engage and nurture student projects/activities with creative potential to tackle emerging complex engineering problems in the world. The funded projects/activities should focus on out-of-classroom learning experience with the aims of aligning with the vision and missions of the Faculty of Engineering and the Innovation Academy.

Website:
<https://www.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 go on exchange every year. Some examples of the universities are:

Canada
McGill University
Queen's University
The University of British Columbia
University of Calgary
University of Toronto
University of Waterloo

UK
King's College London
University College London
University of Cambridge
The University of Edinburgh
University of Nottingham

France
CentraleSupélec
ECAM LaSalle
Institut National des Sciences Appliquées de Toulouse

Finland
Aalto University

Denmark
Technical University of Denmark

Germany
Bremen University of Applied Sciences
Technical University of Darmstadt

Japan
Tohoku University

South Korea
Korea Advanced Institute of Science and Technology (KAIST)

US
Drexel University
Embry-Riddle Aeronautical University
Princeton University
Tufts University
University of California
University of Illinois at Urbana-Champaign
University of Wisconsin-Madison

Spain
University of Navarra

Singapore
Nanyang Technological University
National University of Singapore

Australia
Monash University
University of Melbourne
University of New South Wales
University of Queensland
The University of Sydney



Molly Rathore

BEng in Electrical Engineering

HKU Worldwide Student Exchange Programme in 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

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 program.



Lau Sum

BEng in Engineering Science

The Exeter College Summer Programme in University of Oxford, UK

The summer programme was a fascinating overseas experience where I can study something about engineering or of personal interest. I can also feel the culture in the UK and the study life in Oxford.

Tulbassova Bayansulu

BEng in Industrial Engineering and Logistics Management

Northeastern University, USA

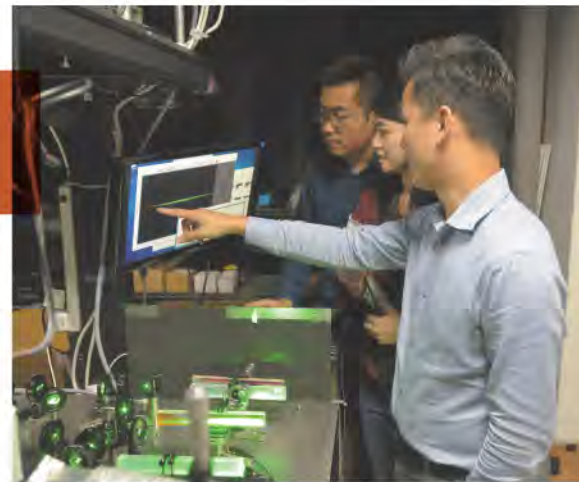
I was very lucky to have an opportunity to go to Northeastern University in Boston, MA. The university has a strong spirit, diverse community, and many opportunities to explore for any taste. As an exchange student, I immediately felt a part of a community. The best part of my academic experience was the interaction with professors and lively in-class discussions which allowed to significantly deepen the understanding of the course topics.

Second, the university had a perfect location with major sites in walking distance proximity. So, in our free time we could easily explore Boston. The Museum of Fine Arts was just across the street and as students we had a free multi-use pass. The highlight of my exchange was going to the Boston Pops' Holiday Pops concert for Christmas with other exchange students. We could also easily travel to other cities: we took a bus to New York, Philadelphia and Niagara Falls. If you've dreamt of visiting New York for Christmas or trying a cheesesteak in Philadelphia, then Boston is a perfect destination for you.



Internship

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



Students normally spend six to eight weeks in summer after their third year of study as internship. Common training partners are:

- Boeing Company
- Civil Engineering and Development Department (CEDD)
- CLP Power Hong Kong Limited
- Electrical & Mechanical Services Department (EMSD)
- Gammon Construction Limited
- HK Electric
- HSBC
- IBM
- J.P. Morgan
- Morgan Stanley



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 the university 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 the 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.



Chu Wing-yan BEng in Biomedical Engineering Summer Internship at Nano and Advanced Materials Institute (NAMI)

The summer internship experience in NAMI further reaffirms me to step into the research field. I explored product research working environment and found working with teammates with various academic and cultural backgrounds enjoyable. Product research requires broad, interesting and realistic considerations, with amazing direct daily-life effect. All the experiences ignite my curiosity and creativity, encouraging me to self-propose interesting research for final year project, fueling my passion in research in the future.

Lee Lik-ho, Jacky BEng in Biomedical Engineering Summer Internship at St. Paul's Hospital

I worked at St. Paul's Hospital as a biomedical engineering intern during summer in which I gained insights in healthcare industry. During the internship, I have learnt the safety requirements and functionality standards of different medical devices, from diagnostics like ultrasound scanner to treatment like infusion pump. I have also acquired hands-on experiences on medical device maintenance by using different testers like electrical safety testers, and vital sign monitor calibrators to check the safety and functionality of the devices. Furthermore, I have learnt how a biomedical engineer plans for installation of new medical devices by comparing the specification, cost, user experiences and other factors to make the best decision for the hospitals and medical professions. These experiences expand my knowledge of biomedical engineering different from academics but as a service provider in hospitals to assist medical professions by ensuring the safety and functionality of medical devices.



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 is a memorable and challenging internship, helping 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' end-to-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 broaden my horizons about this industry. It is not something that can be learned from the lecture. I feel more prepared for my career.





Service Learning

Apart from 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. Teachers, 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 School in Sankhuwasabha District of Eastern Nepal.

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 are essential for engineering students in their future career. 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

Academically strong students 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 into 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

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. The most important capstone experience 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 to enhance 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.



Student Achievements

At HKU Engineering, we focus on nurturing students with an all-rounded development. 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)



1st Runner up of The HKIE Engpreneurs Award 2021 – Young Innovators



HKU team "BTCHoli" won the first place at the first blockchain hackathon in Hong Kong



Most Creative Idea Award at SG: Digital Wonderland



Champion of The ICE HKA G&S Model Building Competition



World Champion of 2020 Microsoft Imagine Cup



Champion of The HKIE Engpreneurs Award 2021 – Young Innovators



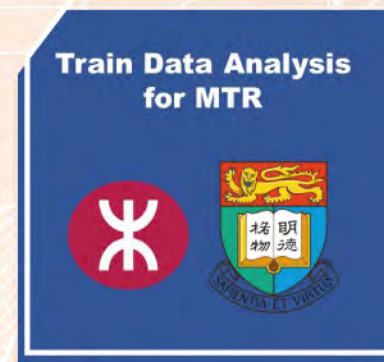
Champion of the 9th Greater China Design Competition



Champion of the Fifth Louis Vuitton Supply Chain University Contest



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



Champion at the Young Professionals Exhibition & Competition 2020



Champion at the Payload Challenge 5 of British Model Flying Association 2019 University and Schools Flight Challenges



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



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

BEng in Civil Engineering

Civil Engineering is the science and art of utilizing 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



FOCUS of the programme:

Students may organise their study of disciplinary elective courses to specialize 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

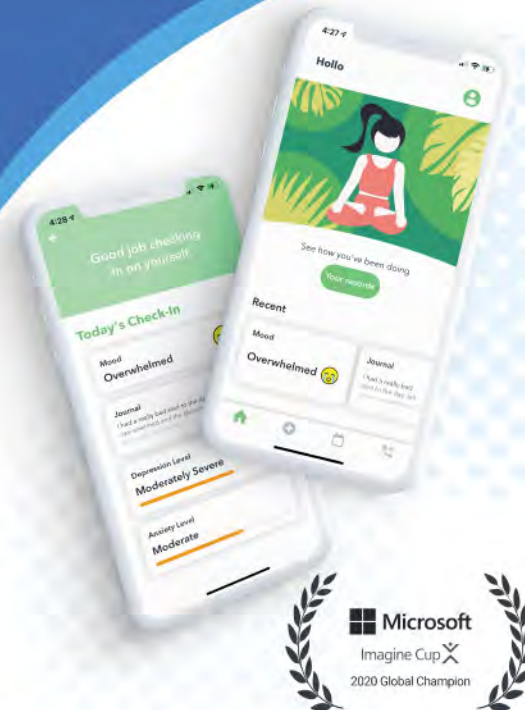


Department of Civil Engineering



Tel: (852) 3917 2286
Email: civdept@hku.hk
Website: <http://www.civil.hku.hk/>

BEng in Computer Science



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.

FOCUS of the programme:

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

- AI & Robotics
- Big Data Analytics
- Financial Computing
- System & Networking
- Theoretical Computing Science



A Final Year Project on "Early Diagnosis of Scoliosis in Children from RGB-D Images Using Deep Learning" was selected as Top International 20 by the James Dyson Award 2020

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. On 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 career 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.



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 endeavor.

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

Department of Computer Science



Tel: (852) 2859 2180
Email: enquiry@cs.hku.hk
Website: <https://www.cs.hku.hk/programmes/beng-compssc/admission>

BEng in

Computer Engineering / Electrical Engineering / 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 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



Tel: (852) 3917 7093
Email: undergrad-admission@eee.hku.hk
Website: <https://www.eee.hku.hk>



FOCUS of the programme:

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

Computer Engineering (CE)

(jointly offered by EEE and CS)

- Ambient Computing
- Big Data Processing
- Robotic & Autonomous Systems

Electrical Engineering (EE)

- Smart Power Systems
- Modern Electric Transportation
- Intelligent Built Environment

Electronic Engineering (ElecE)

- Nanoelectronics
- Next-generation communications
- Data and AI systems



BEng in

Industrial Engineering and Logistics Management



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.

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.

FOCUS of the programme:

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

- Systems analytics
- Decision analytics
- Robotics and Automation
- Logistics engineering & supply chain management
- Cyber-physical systems



Career Prospects:

- Banking and finance
- Logistics and transport
- Consultancy
- Services and manufacturing

Department of Industrial and Manufacturing Systems Engineering

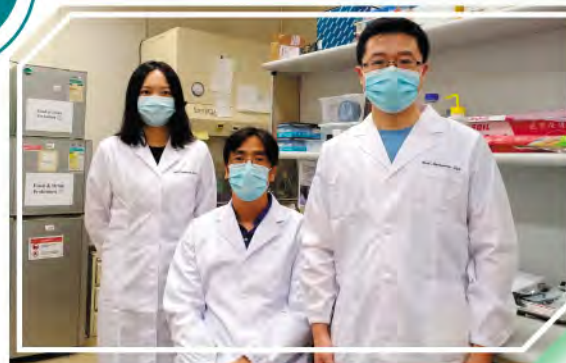


Tel: (852) 3917 2586
Email: imse@hku.hk
Website: <https://www.imse.hku.hk>

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.

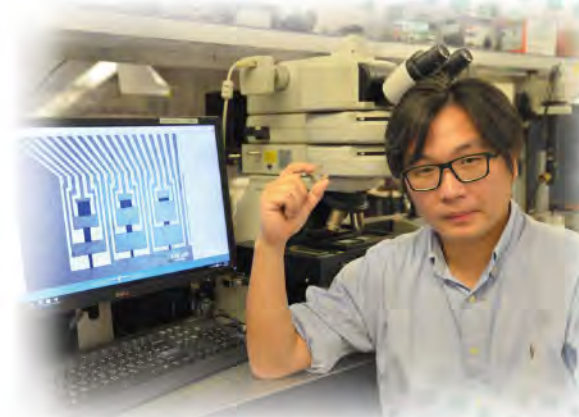
The Department offers choices of guided electives in biomechanical engineering, building services engineering, energy engineering, environmental engineering, materials science & engineering and of course the other general mechanical engineering subjects.



FOCUS of the programme:

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

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



Career Prospects:

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

Department of Mechanical Engineering



Tel: (852) 3917 2635
Email: mech@hku.hk
Website: <https://www.mech.hku.hk/>



BEng in Biomedical Engineering



The BEng(BME) (6925) 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 specialize in one of the following focuses:

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



Career Prospects:

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

Biomedical Engineering Programme



Tel: (852) 3917 2803
Email: bmeengg@hku.hk
Website: <https://www.engineering.hku.hk/bmeengg/>

JS6951

BEng in Engineering Science



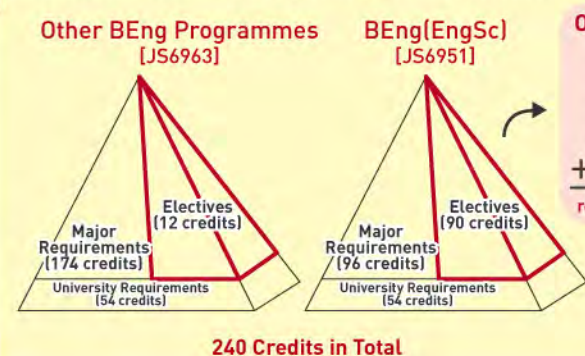
The BEng in Engineering Science, BEng(EngSc), is a unique programme that aims to train future engineers and innovation leaders with solid engineering skills and in-depth **interdisciplinary knowledge** to meet major global challenges facing mankind. It is a multidisciplinary programme that offers a **wide range of career prospects**.

Among all the programmes of HKU Engineering, BEng(EngSc) is special. It is the **most flexible** engineering programme in Hong Kong. It uses a major/minor structure. Students choose one of the five majors, and then study the second major in one of the remaining four majors, or the second major and/or minor(s) offered by the Faculty of Engineering or other faculties.

In this programme, the small cohort of students has support from the professors of all engineering departments. Students can build a **strong network** for their professional development.

Highlights of the programme:

Flexible Multi-disciplinary Curriculum



Options for Electives:

- (1) Second Major (72 - 96 credits)
- (2) Minor (36 - 48 credits)
- (3) Free and Additional Disciplinary Electives (18 - 96 credits)

requires at least 90 credits

BEng(EngSc)

= BEng +

Chemistry
Statistics
Computer Science
Finance
Economics
Global Studies
Urban Studies
Spanish
Your Choices

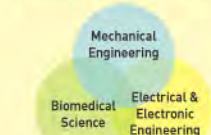
Career Prospects:

Five Majors

Subjects

Possible Careers

Healthcare Engineering



- Healthcare
- Medical imaging/devices
- Life science
- Cell/tissue Engineering

- Biomedical engineers
- Research engineers

Energy Engineering



- Energy crisis
- Renewable energy
- Power systems
- Electric vehicles

- Engineers in power and electricity company, mass transportation corporation, and civil service

Environmental Engineering



- Waste management
- Hydrology
- Pollution control
- Renewable energy

- Engineering consultants
- Scientific officers
- Engineers in civil service

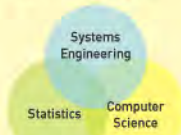
Materials Engineering



- Nanotechnology
- Biomaterials
- Optical network
- Aeronautical applications

- Materials engineers
- Research engineers

Systems Analytics



- Internet of things
- Artificial intelligence
- Digital twin
- Virtual and augmented reality

- Quantitative analyst
- Business analyst
- Data scientists
- Industrial and systems engineers

Department of Industrial and Manufacturing Systems Engineering



Tel: (852) 3917 2668
Email: engsc@hku.hk
Website: <https://www.imse.hku.hk/beng/beng-engsc>



JS6248

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 aims 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, foundation of knowledge, and data analysis. Moreover, there are internship opportunities for students to put theory into practice.

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 the HKU-SCF FinTech Academy.

FinTech Focus with Essential Legal Studies - students have to take at least two legal subjects offered by the Law Faculty that are related to finance and technology.

Internship Schemes with Industry



Career Prospects:

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



Tel: (852) 2859 2180
Email: enquiry@cs.hku.hk
Website: <https://www.cs.hku.hk/fintech-home>



BEng in Data Science and Engineering

(To be launched in Sept 2022)

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



Tel: (852) 2859 2180
Email: enquiry@cs.hku.hk
Website: <https://www.cs.hku.hk/programmes/beng-datasc/>



Highlights of the programme:

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

Data-centric techniques: Various analysis techniques for different types of data (e.g. imaging data, IoT data, and diverse data obtained from 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.



Programme subject to final approval

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
- Computer Science
- Electrical Engineering
- Electronic Engineering
- Industrial Engineering and Logistics Management
- Mechanical Engineering
- Biomedical Engineering

Complete Engineering programme requirements and receive BEng degree

Year 1

Year 2-4

By end of Year 4

Year 5

Bachelor of Engineering Administration

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)
- Finance
- Human Resource Management
- Information Systems and Analytics (Major in ISA is not open to candidates of BEng in Computer Science)
- Marketing

Study BBA on self-financing basis and receive BBA degree

The Faculty of Engineering and the HKU Business School jointly offer the Global Engineering and Business Programme (JS6937) in which students can receive a dual degree in Bachelor of Engineering and Bachelor of Business Administration after the completion of five years of study at HKU.



Highlights of the programme:

- This is an inter-disciplinary 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 a 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

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 9% 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.

Faculty of Engineering



Tel: (852) 3917 2803
Email: enggugad@hku.hk
Website: <https://www.ugadmissions.engg.hku.hk/gebp>

Admissions Requirements

BEng Programmes [JS6963], BEng(EngSc) [JS6951], BEng(BME) [JS6925], BAsC(FinTech) [JS6248], BEng(DS&E) [JS6262]^ & GEBP (i.e. BEng/BEng(BME) & BBA Double Degree) [JS6937]

JUPAS Route

Minimum entrance requirements to HKU Engineering:

BEng Programmes [JS6963], BEng(EngSc) [JS6951], 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	5
Chinese	3
Mathematics	3
Liberal Studies	2
Elective Subject	
Another 2 elective subjects	3

Candidates with level 4 in English Language and good results in other HKDSE subjects will be exceptionally considered on a case by case basis.

BEng(DS&E) [JS6262]^

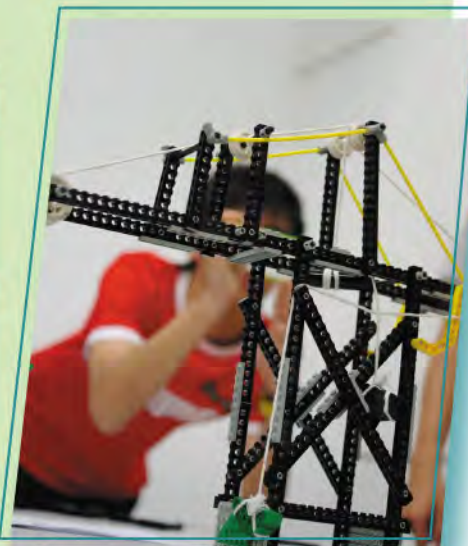
HKDSE Subject	Level
Core Subject	
English	3
Chinese	3
Mathematics	3
Liberal Studies	2
Elective Subject	
Extended Module 1 or 2 of Mathematics	3
Another elective subject	3

^ Subject to final approval

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.



Non-JUPAS Route



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

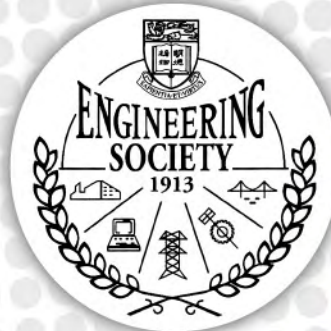
- GCE A-Level
- International Baccalaureate (IB)
- India Board Examination
- STPM/UEC under the Malaysian examination system
- Indonesian Examination System
- Canada Provincial Examinations
- SAT/Advanced Placement (AP) Test under the US system
- Associate Degree/Higher Diploma

^ Subject to final approval

Direct Admissions Scheme (DAS)

Graduates/final-year students of a recognised full-time Associate Degree (AD) or Higher Diploma (HD) programme of at least two years in duration from a community college or Hong Kong Institute of Vocational Education (IVE) under Vocational Training Council (VTC) in Hong Kong are welcome to apply for admissions to the third year of BEng programmes in the DAS.





Engineering Society

Engineering Society, which was established in 1913, is the oldest faculty-based society in 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 at serving 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.



Engineering students in HKU Centennial Campus.



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

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



Engineering Society, in 1960.



The 108th Executive Committee of the Engineering Society, in 2021

Contact:

Email: enginsoc@hku.hk

