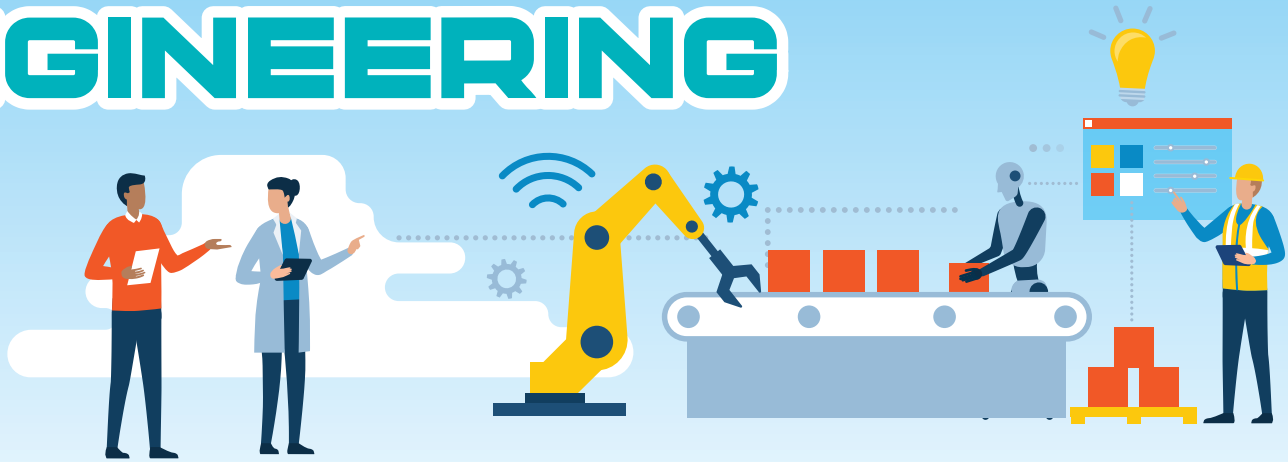# COLLEGE OF ENGINEERING

WORLD RECOGNITION

Quacquarelli Symonds (QS) World University Rankings

Worldwide (2024)

70th

By Subjects (2023)

Top 100
- Architecture & Built Environment
- Materials Science

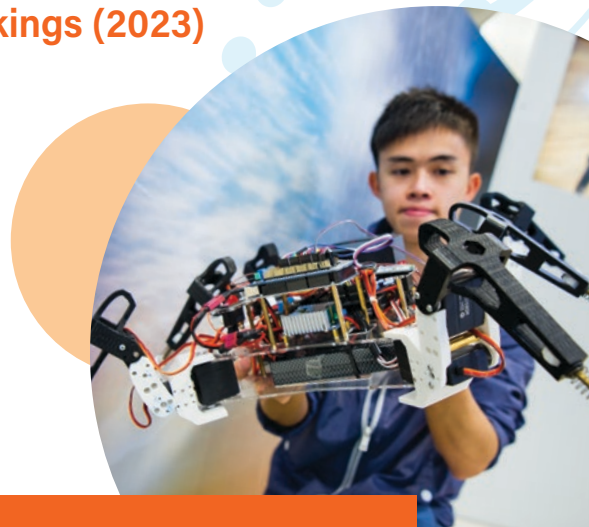## ShanghaiRanking's Global Ranking of Academic Subjects (2023)

By Subjects

Top 50

- Automation & Control 1st
- Chemical Engineering 1st
- Civil Engineering
- Computer Science & Engineering
- Electrical & Electronic Engineering 1st
- Energy Science & Engineering 1st
- Instruments Science & Technology

- Library & Information Science 1st
- Materials Science & Engineering 1st
- Mechanical Engineering
- Metallurgical Engineering 1st
- Nanoscience & Nanotechnology 1st
- Telecommunication Engineering
- Transportation Science & Technology

U.S. News and World Report Global University Rankings (2023)

By Subjects

Top 50

- Artificial Intelligence
- Chemical Engineering 1st
- Computer Science
- Electrical and Electronic Engineering 1st
- Engineering
- Materials Science 1st
- Nanoscience and Nanotechnology 1st

1st **1st in Hong Kong**

BACHELOR'S DEGREE

Depending on the departments, students admitted to the 4-year bachelor's degree programmes will either be enrolled in a major if the department offers one major, or study the common first year in a department and then choose majors in the department after completing the first year of study.

JS1217

College of Engineering

Pathway for Research, Innovation, and Multinational Engineering (PRIME)

The PRIME programme is designed to provide exceptional students with a comprehensive education in engineering and opportunities to gain valuable experience through research internships and work placements in top universities and companies worldwide. This programme is intended to equip students with the skills and knowledge needed to excel in the field of engineering and to prepare them for successful careers in the global engineering industry. Key features of the PRIME programme include a free choice of any major in the College of Engineering, one-on-one mentorship throughout the study period, overseas experience in Year 3 or Year 4 (either a one-year research internship or a global work placement in an international company), and an interdisciplinary final-year project. The PRIME programme is open to talented and motivated students with a passion for engineering and a commitment to excellence.

📞 (852) 3442 4133   @ ceng.adm@cityu.edu.hk   💻 www.cityu.edu.hk/ceng

JS1201

Department of Architecture and Civil Engineering

Architectural Engineering

This major is fully accredited by the Hong Kong Institution of Engineers (HKIE) as a recognized degree for applying professional engineer qualification. The major aims to provide students with the academic background necessary for a professional architectural and building services engineer. They will be able to manage the design, manufacturing, installation, commissioning and maintenance of various building services engineering systems including air-conditioning systems, electrical services, fire protection systems and pipe systems. They will also be equipped with the concept of integration between various disciplines within the architectural and building services engineering and also the other trades of the building industry.

Architecture and Surveying
(with 2 streams in Architecture / Surveying)

This major with two streams in Architecture and Surveying aims to provide students with an environment that can develop their intellectual, analytical and critical abilities, and enable the graduates to become competent, skilled, and reflective new members of the architecture or surveying profession. This major also equips students with well-developed interdisciplinary knowledge to facilitate them to communicate effectively; contribute through team and individual application of skills and knowledge to resolve practical construction-related problems; commit to lifelong learning; and build up leadership skill in the building and construction professions.

Civil Engineering
(with 2 streams in Structural Engineering / Infrastructure and Smart City)

This major is fully accredited by the Hong Kong Institution of Engineers (HKIE) as a recognized degree for applying professional engineer qualification. This major aims at equipping students with a solid foundation to work as a civil engineer. It covers a wide spectrum of areas, for example, construction technology and materials, engineering management, environmental engineering, geotechnical engineering, green urbanism, hydraulic engineering, structural engineering and transportation engineering. There are two specialisms in the major: structural engineering, and infrastructure & smart city. Graduates are expected to work as civil/structural engineers, geotechnical engineers, construction and site engineers, construction project managers, building engineers, transport engineers, etc. in private and government sectors. There are opportunities for further studies and research at graduate levels in Hong Kong, Mainland China and overseas.

📞 (852) 3442 7609   @ acedept@cityu.edu.hk   💻 www.cityu.edu.hk/ace

JS1211

Department of Biomedical Engineering

Biomedical Engineering

This major aims to pursue excellence in education, research and innovation through the fusion of engineering with life sciences for the advancement of human health. Students will be prepared to apply their skills to a variety of challenges in their chosen field, to solve problems in the biomedical engineering related professions, to make decisions that are socially and ethically responsible, and to build and expand upon their undergraduate foundations by engaging in learning opportunities throughout their careers.

Graduates from this major are expected to possess expertise that will address the increasing public concerns and demands on medical diagnostics and therapeutic treatments, biomedical instruments, food safety and quality, advancement in pharmaceutical and health maintenance products, as well as the awareness for human health and wellness.

📞 (852) 3442 8420   @ bmego@cityu.edu.hk   💻 www.cityu.edu.hk/bme

JS1204

Department of Computer Science

Computer Science

The major aims to provide the best possible undergraduate education with a well-balanced emphasis on computer science theories, practical hands-on development skills, as well as software engineering know-how that are necessary for successful careers as professional software developers, system analysts, system architects and technology officers. Our study streams (Artificial Intelligence, Data Science, Information Security, Multimedia Computing, and Software Engineering & Project Management) allow students to further specialize in different areas of expertise. In addition, the major has a mandatory internship component that allows students to gain real world experience, which will provide a significant edge when students look for employment after graduation.

📞 (852) 3442 8580   @ csadm@cityu.edu.hk   💻 www.cs.cityu.edu.hk

JS1205

Department of Electrical Engineering

Computer and Data Engineering

The aim of this major is to provide students with a strong foundation and broad skills in the core and related computer and data analysis technologies. Students will be equipped with the knowledge in both theoretical and practical aspects of computer systems. The curriculum encompasses hardware and software design, multimedia technologies, data analytics and security, cloud computing systems, machine learning, and artificial intelligence. Upon completion of the major, students will be sufficiently prepared for employment, and to pursue postgraduate studies and engage in life-long learning.

Electronic and Electrical Engineering

The aim of this major is to provide students with a solid education in advanced electronic and electrical technologies. Students will be exposed to the latest developments in (1) wireless communications & data technology; (2) microwave, terahertz & optical technologies; (3) photonic, electronic, & sensor devices; (4) smart control & electrical power systems; and (5) bioelectronics & bioinformatics. Our programme will transform students into well-trained professional engineers in the rapidly changing knowledge-based economy. They will be equipped throughout the training with the skills, vision, and opportunity to progress further in their career path.

Information Engineering

This major aims to equip students a balanced understanding of the theory and applications of information engineering, which encompasses networking and communications, algorithms and optimisation, cybersecurity, artificial intelligence, and signal processing. It offers all-round education, which nurtures independent thinking, creativity, and various soft skills. Upon completion of the major, graduates will be sufficiently prepared for further studies or employment in a wide range of economic sectors, mainly technology, but also business, banking, finance and trading in Hong Kong and the Asia-Pacific region.

Microelectronics Engineering

The aim of this major is to provide students with sound knowledge of the fundamental principles involved in the design and fabrication of integrated circuits (ICs), and a comprehensive understanding of electronics and information technologies. The curriculum includes application specific IC (ASIC) design for novel applications, nanotechnologies for high-performance devices and microsystems, and new designs and materials for ICs, digital processor, system-on-chip, wireless and optical communications, and embedded system design. Upon completion of the major, students will be sufficiently prepared for employment in various sectors of the microelectronics and electronics industry, and well equipped with fundamental knowledge for pursuing postgraduate studies.

📞 (852) 3442 7740   @ eedept@cityu.edu.hk   💻 www.ee.cityu.edu.hk

JS1210

Department of Materials Science and Engineering

Materials Science and Engineering

'Materials' is the key for new technology development. Recent government supported initiatives in developing Hong Kong as a smart city have significantly increased the job opportunities in materials related industries. This major aims at training young talents to facilitate the development of local high-tech industries. Students will be provided with solid foundation of science in construction, semiconductor, polymer, metallic alloy, nano, and bio materials. The MSE Department is equipped with world-class facilities and emphasis will be put on providing hands-on training in materials fabrication, materials processing, characterization, and materials simulation using computational method. During the four-year program, students will participate in various training modules, including summer engineering workshop, materials design project, and summer industrial and research attachment schemes. Upon graduation, they will become graduate members of the Hong Kong Institution of Engineers (HKIE) and professional engineers after completing the professional assessment.

📞 (852) 3442 2985   @ mse@cityu.edu.hk   💻 www.cityu.edu.hk/mse

JS1207

Department of Mechanical Engineering

Aerospace Engineering

The aerospace engineering major aims to provide students with a significantly broad base of engineering skills. They will meet the needs of the current and the changing aerospace industry, e.g. smart manufacturing, smart inspection, supersonic flight technologies, space flight, the next generation aircraft (e.g. unmanned flying vehicles, bio-inspired flying vehicles and electric aircrafts). Moreover, the multidisciplinary education also enhances graduate employment in areas such as technical services, consultancy, manufacturing and finance, which is aligned with the manpower need in Hong Kong.

Mechanical Engineering

This major aims to provide a well-structured curriculum that combines education, research and development of innovative technologies which enables students to tackle engineering problems in mechanical-related areas efficiently and independently. It equips students with critical thinking, independent research abilities, qualitative and quantitative analysis capacities and also prepares them for professional employment in areas such as engineering design of materials, dynamical and control analysis, automation engineering and micro & nanotechnologies.

Nuclear and Risk Engineering

This major aims to equip students with multi-disciplinary knowledge in nuclear and risk engineering to meet the growing demands in low carbon power generation, healthcare and risk engineering sectors. Graduates can work in a broad spectrum of related professions or industrial sectors, such as nuclear power industry, materials engineering, nuclear medicine related fields, radiation protection, environmental protection, nuclear radiation equipment industry, risk assessment in the financial sector and also disaster management.

📞 (852) 3442 2067   @ mnego@cityu.edu.hk   💻 www.cityu.edu.hk/mne

JS1216

Department of Systems Engineering

Intelligent Manufacturing Engineering

This major aims to develop young talents for "Industry 4.0" and "intelligent manufacturing". The major emphasises the use of artificial intelligence, computer modelling and optimisation, industrial big data, Internet of Things, automation and robotics in smart manufacturing and smart organisations. Our graduates will possess the practical skills and knowledge for innovating and managing the operations of modern manufacturing enterprises. These skills and knowledge will also apply to service industries and commercial enterprises to automate and digitalise their various processes, to push for higher and higher efficiency.

📞 (852) 3442 9321   @ sye.office@cityu.edu.hk   💻 www.cityu.edu.hk/sye

DOUBLE BACHELOR'S DEGREE

JS1221

Department of Computer Science

Computer Science and Computational Finance & Financial Technology

The programme is jointly offered by the Department of Computer Science and the College of Business, with an aim to educate a new generation of professionals with a unique combination of expertise from the important areas of computer science, computational finance, and financial technology. Finance is one of the pillars supporting the economy of Hong Kong, and the use of computational technologies has become pervasive in different business sectors. With recent significant advances in artificial intelligence (AI) and blockchain technologies, and their increasing applications in every aspect of the financial industry, the programme, which comprises a broad set of courses from the Department of Computer Science and College of Business, will train students with a distinctive and interdisciplinary blend of knowledge across the complete spectrum of computer science, computational finance and financial technology areas, from AI, big data analytics, derivatives pricing, financial econometrics, portfolio management to software engineering.

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JOINT BACHELOR'S DEGREE PROGRAMMES

Joint Bachelor's Degree Programmes provide students with an international undergraduate educational experience. Students will spend two years at CityU and two years at the partner university. On completion of the curriculum requirements of both universities, students will earn two bachelor's degrees - one from CityU and one from the partner university.

COLUMBIA CityU

City University of Hong Kong | Columbia University
Joint Bachelor's Degree Program

City University of Hong Kong

Columbia University

JOINT BACHELOR'S DEGREE PROGRAM

Curriculum Design

| Year 1 CityU | Year 2 CityU | Internship* Year | Year 3 Columbia U | Year 4 Columbia U |

Eligible Major

- Bachelor of Science in Computer Science

* Students are required to complete a mandatory one-year internship in Hong Kong prior to the commencement of study at Columbia University.

For more information, please visit:

Joint Bachelor's Degree Programme between City University of Hong Kong and National Taiwan University

Curriculum Design

| Year 1 CityU | Year 2 NTU | Year 3 NTU | Year 4 CityU |

CityU 香港城市大學 City University of Hong Kong

Eligible Major

- Bachelor of Engineering in Civil Engineering
- Bachelor of Engineering in Materials Science and Engineering

For more information, please visit:

Civil Engineering   Materials Science and Engineering

COLLEGE OF ENGINEERING

- Department of Architecture and Civil Engineering (ACE)
- Department of Biomedical Engineering (BME)
- Department of Computer Science (CS)
- Department of Electrical Engineering (EE)
- Department of Materials Science and Engineering (MSE)
- Department of Mechanical Engineering (MNE)
- Department of Systems Engineering (SYE)
- Co-operative Education Centre

CENG

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December 2023