Electronic Engineering
Undergraduate Programme
電子工程學本科生課程
中大電子工程學 (CUHK ELEG) 聯招編號：JS4434

Professional Career Path: Accredited Bachelor of Engineering Programme by the Hong Kong Institution of Engineers (HKIE)

Recognised Research Performance:
One of the CUHK panels with the highest ratio achieving “3 star” and “4 star” in Research Assessment Exercise 2020

CUHK EE programme admits students directly through
• JUPAS channel
• SNDAS channel
• Other admission channels (for applicants with other academic qualifications such as Associate Degree/Higher Diploma, IB, GCE AL, etc.)

Our mission is to educate future leaders in electronic engineering, to pursue knowledge and advance state-of-the-art electronics, including hardware, software and design with electronics as the core, from materials, devices, circuits to systems, and the applications of such technology to meet societal and individual needs. In both teaching and research, the Department is guided by the highest international standards.
Curriculum Structure 課程結構

Year 4 or 5
Graduation Project + Specialized Courses
Capstone Project
Advanced Electives:

Other Engineering Electives
- Computer Networks
- Data Structure
- Software Engineering
- Engineering Economics
- Machine Learning
- Cyber Security
- Artificial Intelligence
- Financial Technology

Free Electives, General Education & Languages
- Business Administration
- Law
- Science
- Social Science
- Arts, Music
- Sports
- Linguistics

Year 4
One-Year Work-Study Programme (optional)

Year 3
Advanced Major Courses
Technical Electives:
- Photonics, Optical Fibers, Circuit Design, Semiconductor Devices, Digital Signal Processing, Power Electronics, Medical Instrumentations
- Professional training: “Build a Gadget”
- “Code an App”
- Entrepreneurship
- Research Skills

Fundamental Major Courses
- Technology and Society
- Applied Electromagnetics
- Communication Systems

Year 2
Engineering Mathematics
- Electric Circuits
- Digital Systems
- Microelectronic Devices

Fundamental Major Courses
- Mathematics
- Physics
- Computer Programming

Year 1
Foundation Courses
- Electrics System Design
- Signals & Systems

Fundamental Major Courses
- Digital Systems
- Engineering Practicum

Student Whole-person Development
Work-Study Programme 工讀計劃

Our work-study programme was first introduced in 1975 in the belief that combining course work and industrial training would narrow the gap between academic education and practical engineering. Students can participate in the work-study programme, as full-time employees, and continue his/her final year of study after that. Most of the students appreciated that the work-study experience was a precious opportunity to learn from what a professional engineer actually do before kick-starting their career.

Participating companies include:
- CLP Power Hong Kong Limited
- Electrical and Mechanical Services Department, HKSAR Government
- HSBC (The Hong Kong and Shanghai Banking Corporation Ltd.)
- MTR (Mass Transit Railway)
- SmarTone Telecommunications Ltd.
- VTech Telecommunications Ltd.
- ASM Assembly Automation Ltd.
- Hong Kong Science and Technology Park

Overseas Exchange Programme 海外交流計劃

EE students can gain international exposure by going for a short term or year-long overseas exchange. Examples: University of Pennsylvania (USA), Technical University of Denmark (Denmark), Karlsruhe Institute of Technology (Germany), KTH Royal Institute of Technology (Sweden), Nanyang Technological University (Singapore)

EE students having an extraordinary learning experience in visiting technology giants and start-up companies in Silicon Valley, California during July 22 - August 2, 2019

BANG, Tae Won
Visited Georgia Institute of Technology in USA in 2019-20

Mr. Leung Ho Man (front center)
Received the prestigious Innovation and Technology Scholarship to support his one-year exchange programme to the University of Liverpool in the UK in 2019-20.
Comprehensive Learning Environment 全方位學習環境

The Teaching Laboratory II and showroom with the latest equipment were newly opened from 2021.

Undergraduate STEM Ambassador Programme STEM 學生大使計劃

The “50th Anniversary Undergraduate STEM Ambassador Programme” is conducted by our Undergraduate STEM Ambassadors, coaching other CUEE peers or/and secondary students. Students could enrich their electronic engineering background by learning and applying theoretical engineering knowledge to real-life applications.

Innovation and Research 創新與科研

Research Assessment Exercise 2020 (RAE 2020), which is an extensive independent assessment of research performance of the eight UGC-funded universities in research over a period of 6 years from year 2015 to year 2020. Electronic Engineering of the Chinese University of Hong Kong received 87%, the highest proportion of world leading (4*) and internationally excellent (3*) research within the Electrical and Electronic Engineering area in Hong Kong, according to RAE 2020 by the University Grants Committee of Hong Kong.

Our Engineering cares neighborhoods 我們的工程關愛社群

We developed wearable blood pressure sensor to provide 24x7 healthcare monitoring services.

We developed an underground wireless smart drainage system for our Drainage Services Department.

We developed an A.I. speech recognition APP for speech disorder detection & keeping voices of someone who is losing ability to speak.

Do you know what “Electronic” meant in Electronic Engineering?

Is it ONLY "Electronic Circuit"? NO

Signal Processing - Computer Vision / Voice Recognition
Integrated Circuit - Semi-Conductor Devices/Arduino / Microcontroller
Optoelectronics - Optical Fiber / Memory / Communication
Wearable Devices - Sensor / Smart Watch
Biomedical - Medical Diagnosis
Artificial Intelligence - Object Recognition / Deep Learning
App Development - iOS / Android App & AR / VR
Robotics - Machine Learning
Solid States - Solar Cell / Materials / SSD
Communication - 5G / Bluetooth / Wifi / RFID / Antenna / Internet of Things
Multimedia Technology  多媒體技術
數碼娛樂：高清晰度數碼電視；電腦動畫與虛擬真實；
電腦合成人聲與音樂
Health & Medical: Digital Hearing Aids, Medical Image Processing
醫療保健：數碼助聽器；醫療圖像處理
Smart City: Autonomous Driving, Forensic Voice Verification, Intelligent Surveillance Vision
智慧城市：自動駕駛；人聲識別與鑑真；
智慧視覺保安監控

Optoelectronics & Optical Communication  光電子與光通信
Optical Communication: Cable TV, Broadband Internet
光通信技術：有線電視；寬頻網絡
Micro-optics: Optical Memory, LCD Projectors, CCD Camera
微光米學：光記憶體；液晶投影；CCD攝像機
Integrated Optics: High-Speed Fibre Optic Components
集成光學：高速光纖器件

Semiconductor Devices & Integrated Circuits  半導體器件與集成電路
Mixed Signal Integrated-Circuit Design: Mobile Phone
混合信號集成電路：流動電話
Smart Cards: Octopus, HKID Card
智能卡裝置：八達通；身份證
Nano-meter Semiconductor Devices and Materials
納米半導體器件和材料

Wireless Technology  無線通信技術
Antenna, Bluetooth, WiFi
天線：藍牙技術；WiFi
Radio Frequency Identification (RFID) for Logistics
應用射頻識別技術的物流系統
Wireless LAN
無線區域網絡
Radio-frequency Radiation Measurement
無線電波輻射測量
Employment of Electronic Engineering Graduates in Last Year

- Electronics and Electrical Engineering / ICT: 65%
- Commercial and Professional Services: 23%
- Social & Public Organisations: 3%
- Education: 3%
- Computer Engineering / Software (Engineering): 6%

Professional Engineers

- POON Hiu Ching, Peggy
  Electronics Engineer
  EMSD

- MUI Tin Wai
  Network Manager (Infrastructure Engineering Control Centre)
  MTR

- Lee Ho Tin
  Graduate Trainee
  HK Electric

- CHENG Foon Lok
  Assistant Electronic Engineer
  1porticos

- WONG Chi Wai
  Assistant Engineer
  MSP

Entrepreneurs

- WONG Wai Kay, Ricky
  Founder of Hong Kong Technology Venture Company Limited (HKT & HKTVMail)
  Honorable Alumni
  HTV

- TSANG Wai Wah, Martin
  CEO and Founder of Haio Energy Limited
  CHARGING

- CHEUNG Ka In, Debi
  Founder of DocumentOnReady
  DocumentOnReady

- LI, Linkai
  Co-founder of Orka Inc.
  ORKA

Researchers

- FOK Mei Po, Mable
  Associate Professor

- CHOW Chi Wai
  Professor

- WAI Hoi To
  Assistant Professor at SEEM Department

- TSANG Sai Wing
  Associate Professor
The JUPAS code of BEng in Electronic Engineering is J34434. Admission is based on the Best 5 HKDSE subject results with subject weighting. For details of subject weighting, please refer to the table below.

<table>
<thead>
<tr>
<th>Minimum Admission Requirement</th>
<th>Subject</th>
<th>Minimum Grade</th>
<th>Subject Weighting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core Subjects</td>
<td>English Language</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Chinese Language</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Mathematics</td>
<td>3</td>
<td>1.5</td>
</tr>
<tr>
<td></td>
<td>Liberal Studies</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Two Elective Subjects</td>
<td>Any one science subject from the following: Biology/Chemistry/Combined Science/Physics/Information and Communication Technology/Mathematics Extended Module I or II</td>
<td>3</td>
<td>1 (1.5 for Physics, M1/M2 if applicable)</td>
</tr>
<tr>
<td></td>
<td>All other Elective Subjects</td>
<td></td>
<td>#</td>
</tr>
</tbody>
</table>

# The Programme accepts any one subject as the second elective. The preferred subjects include Physics and Mathematics Extended Module 1 or 2. Subject weighting of 1.5 is given to the preferred subjects; and 1.0 is given to any other subjects. In addition to the requirements above, bonus points will be awarded to the 6th and 7th subjects, if any.

**Admission Scholarships**

The Department of Electronic Engineering offers admission scholarships to new undergraduate students on the basis of their excellent academic performance.

<table>
<thead>
<tr>
<th>Category</th>
<th>Quota</th>
<th>Amount (HKD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>JUPAS students - Achieve 5** in any STEM subject [1] - Achieve 5* in any STEM subject [2]</td>
<td>100 Students</td>
<td>$20,000/Student $10,000/Student</td>
</tr>
<tr>
<td>Non-JUPAS local students</td>
<td>4 Students</td>
<td>$15,000 each</td>
</tr>
<tr>
<td>International student who does not receive any university scholarship</td>
<td>1 Student</td>
<td>$100,000</td>
</tr>
</tbody>
</table>

[1] Any of the following subjects is considered as a STEM subject: Mathematics (Compulsory Part), Mathematics (Module 1 or Module 2), Physics, Chemistry, Biology, Information and Communication Technology, Combined Science, and Integrated Science.

[2] Not for students who achieve 5** in at least one STEM subject.

**Electronic Engineering Programme**

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