



JS1205

Department of Electrical Engineering 電機工程學系

**Bachelor of Engineering in
Microelectronics Engineering**
工學士(微電子工程學)

DEPARTMENT HIGHLIGHTS

Ranked 21st worldwide and 1st in Hong Kong by subject in **Electrical and Electronic Engineering** according to U.S. News and World Report Best Global Universities Rankings 2022; **15th worldwide and 1st in Hong Kong in Electrical Engineering, Performance Ranking** of Scientific Papers for World Universities by National Taiwan University Ranking 2021; Home to 2 Fellows of the Royal Academy of Engineering (UK), 1 Fellow of the World Academy of Sciences, 27 faculty listed as top 2% of world's most highly cited scientists, 16 Fellows of the Institute of Electrical and Electronics Engineers, USA (FIEEE), 7 IEEE Society Award Winners, and 3 Croucher Foundation Senior Research Fellows.

Application
Specific
Integrated Circuits
(ASIC)
專業集成電路

Nanotechnology,
Microsystems
納米技術、
微型系統

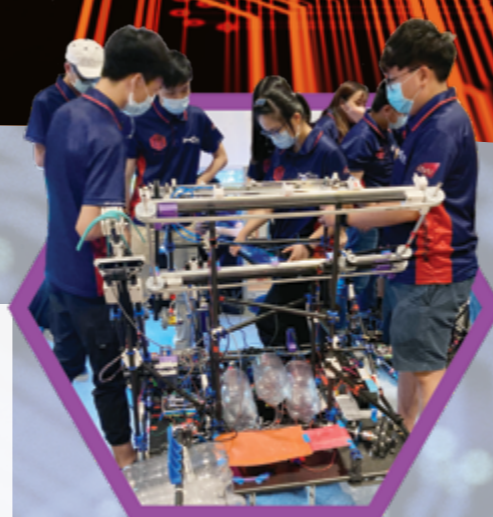
New Materials
for IC
晶片新材料

Digital
Processor
數字電路
處理器

System-on-Chip
單晶片系統

AIM

The aims of this major are to **educate students in microelectronics technologies**, and to **prepare graduates** with the necessary knowledge, skills and understanding **to pursue careers as professional engineers** in semiconductor and related fields. The contents covered contain sufficient **breadth** to allow graduates to **work across boundaries**, and sufficient **depth** to equip and prepare them well for **employment and postgraduate studies**. Through this programme, our graduates will also gain the ability and vision that will enable them to become independent life-long learners in this rapidly changing high-tech industry.



CURRICULUM HIGHLIGHTS

- **Application Specific Integrated Circuit (ASIC) design** for applications, such as consumer products, communication equipment, medical device, industrial applications, etc.
- **Nanotechnologies for high performance devices and microsystems**, and
- **New technologies and materials for Integrated Circuits (ICs)**.

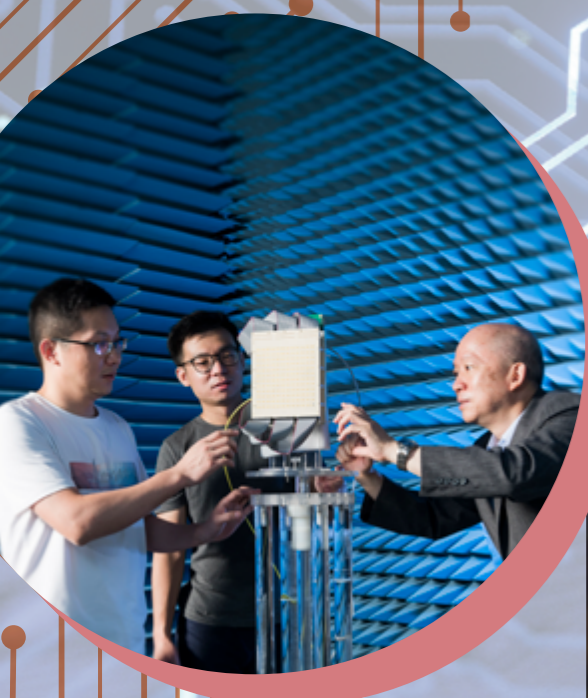
ACCREDITATION

The major is intended to seek accreditation by the **Hong Kong Institution of Engineers (HKIE – 香港工程師學會)** in disciplines of **Electronics (ENS)**; and **Control, Automation & Instrumentation (CAI)**. This is one of the educational requirements for obtaining Charter status. Based on the Washington Accord, **graduates will receive reciprocal recognition from equivalent bodies** in Australia, Canada, China, Chinese Taipei, Hong Kong-China, India, Ireland, Japan, Korea, Malaysia, New Zealand, Pakistan, Peru, Russia, Singapore, South Africa, Sri Lanka, Turkey, the United Kingdom and the United States.



CAREER PROSPECTS

Graduates of the programme can pursue an **exciting suite of career opportunities** involving the **design and production of microelectronics** and related technologies, in **Hong Kong** and in the **Greater Bay Area**. Hong Kong is home to leading companies in Integrated Circuit (IC) design and technology including **Huawei, AMASIC, UMEC, REDISH, Infineon, and Solomon Systech**. These companies and others constitute a **strong demand for microelectronic engineers** amid the strong global market for ICs. The emergence of Hong Kong as a **technological hub in the Greater Bay Area** further accentuates this workforce demand. **Across the border** in Shenzhen, there is also **huge demand on well-trained IC engineers**. Beyond employment as microelectronic engineers, graduates of this programme are also well prepared for a wide range of careers available to electrical and electronic engineers.





CO-CURRICULAR ACTIVITIES

Company Internships

In collaboration with industry, the Department offers **internship schemes of various lengths (from 3 months to one year)** to better prepare students for work upon graduation. Students are connected to prominent industrial and business leaders and 80-100 places are secured yearly. Some companies include Huawei, Sensetime, ASM Technology, Sengital, M-Lab, Lexiwave, SUGA Electronics and Compass Technology.

Global Outreach

Uplifting students' global outreach and international competitiveness through student exchange is one of the Department's goals. **Since 2015, more than 330 students have been sent out to top universities** in countries including **Australia, Canada, France, Japan, Korea, the United Kingdom, the United States** and many others, for semester-long and/or summer exchange. In addition, the **Overseas Internship Scheme (OIS)** provides overseas internship opportunities to 30-40 students every year.

Student Activities

Students learn both inside and outside the classroom, and engineers grow by experience. The department provides **ample extracurricular opportunities** such as undergraduate student research opportunities, academic, technical and entrepreneurial student competitions, student tutoring schemes, technical and soft-skill workshops and student societies. Through these opportunities students apply technical knowledge, hone their communication skills, find their passions, make life-long connections and, in some cases, launch their careers.

