Admission Requirements

Applicants must meet the general requirements for admission to the graduate programs and should possess a good honours degree in a related field. Some individual programs may have specific or additional entry requirements.

Applicants whose first language is not English and whose degree or equivalent qualification was awarded by an institution where the medium of instruction was not English will also have to meet the English language requirements.

Further details at *http://pg.ust.hk/admissions*

General enquiries on admission-related matters:

Postgraduate Outreach and Admissions Unit
Office of Postgraduate Studies
Tel : (852) 2623 1120
Email : gradmit@ust.hk

Program-specific enquiries:

For MPhil and PhD programs
Tel : (852) 2358 7040 / 2358 7038
Email : eequestions@ust.hk

For self-financing MSc programs
Tel : (852) 2358 6959 / 2358 6966
Email : mscicde@ust.hk / msctelc@ust.hk / msceleg@ust.hk

Department of Electronic and Computer Engineering

Welcome

Power ahead and make your postgraduate studies really count in the Department of Electronic and Computer Engineering. The recent evolution of Electronic and Computer Engineering has seen it develop into a wide-ranging discipline covering technologies critical to the growth of the knowledge economy.

Networking, wireless communications, multimedia signal processing, microelectronics, microprocessors, IC design, opto-electronics, display technologies, and control and robotics all fall into this exciting discipline. Advanced training in these fields opens up a wealth of career opportunities in industry, business, finance, government and universities worldwide.

The Department has gathered together a talented faculty team, with PhDs from the world's top universities, and equipped its laboratories and classrooms with state-of-the-art facilities to enable pioneering research and multimedia teaching. We have over 40 teaching faculty members and over 250 research postgraduate students and are committed to world-class research and excellence in teaching, leading to results with significant international impact.

Our goal is to prepare students to become leading academics, high-quality engineers or productive managers in the ever-changing world of high technology. If you are looking for a diverse and challenging intellectual environment to increase your knowledge and skills, then join us.

Visit the Department of Electronic and Computer Engineering website at *www.ece.ust.hk*

Research Focus

The Department's research concentrates on two broad areas: microelectronics and information technology. These are subdivided into related sub-areas.

- **Biomedical engineering:** neuromorphic networks and engineering, bio-electronics and bio-chips, biomedical signal/image processing and bioinformatics, non-invasive optical technology for early detection of cancers, sensors for non-invasive quantification of important biological analytes.

- **Computer engineering:** computer architecture, man-machine systems, VLSI design, embedded systems, neural network and artificial intelligence systems, signal processing, fuzzy logic.

- **Integrated circuit and system design:** analog and digital IC design techniques, VLSI design, system-on-chip, simulation and verification tools, and semiconductor devices and modeling. Advanced topics include RF and mmW IC and systems, switched-capacitor and continuous time filters, data converters, image and bio-medical sensors, power management IC, signal processing and system architectures, and design automation.

- **Micro-electro-mechanical systems (MEMS):** basic physics, micro-fabrication technology, devices and integrated systems, MEMS packages.

- **Microelectronics/Nanoelectronics:** design and fabrication of semiconductor devices for practical applications and frontier research; semiconductor fabrication technology design and process development.

- **Multimedia signal processing:** video/image compression and processing, H.264, HEVC, AVS, JPEG2000, motion estimation, rate control, transcoding, error resilience/concealment, enhancment, super resolution, color, demosaicing, denoising, deinterlacing, encryption, watermarking, distributed coding, scalable coding, 3DTV coding, disparity estimation, view synthesis, compressive sensing, sparse processing, subpixel rendering, HDR, computational photography, GPU processing, software/hardware co-design.

- **Photonics:** silicon microdisplays, bistable liquid crystal displays, organic light emitting diodes, semiconductor laser diodes, solid state lighting, silicon nanophotonics.

- **Speech and language processing:** robust speech recognition, emotional speech recognition, spoken language understanding, speech translation, machine translation, spoken document summarization and information retrieval, audio-visual speech recognition, speech signal processing, speaker recognition, multilingual speech and language processing, embedded speech systems.

- **System and automation:** control, robotics, manufacturing automation, discrete event systems, optimization.

- **Wireless communications and networking:** wireless communications, MIMO/OFDM systems, cognitive and cooperative communications, dynamic spectrum access, network information theory, cross-layer optimizations, distributive algorithms designs and optimizations, next generation network architecture and designs.

Postgraduate Programs

Research Postgraduate

Master of Philosophy (MPhil) in Electronic and Computer Engineering

The MPhil program is designed for those interested in pursuing a career in research and development in industry or academia, and is an excellent preparation for a PhD degree. Students are required to undertake coursework and successfully research and defend a thesis.

Doctor of Philosophy (PhD) in Electronic and Computer Engineering

The PhD degree caters for those wishing to pursue a career in advanced industrial research and development or university research and teaching. It emphasizes training in original thinking and independent research. Students must successfully complete coursework and a thesis of significant original research.

Taught Postgraduate

Master of Science (MSc) in Electronic Engineering

The Program brings students up-to-date in the range of technologies that are increasing the speed at which we can acquire, interpret, and act upon information. This program is deliberately broad based to provide a balanced view of the state of the art for maximum flexibility. Students may tailor their program to their unique interests.

Further details at **www.seng.ust.hk/msc/eleg**

Master of Science (MSc) in IC Design Engineering

The program is tailored to train IC design engineers for Hong Kong, mainland China as well as globally. Topics cover basics as well as advanced IC knowledge and new emerging technologies. It is designed for professionals and students who are interested to acquire in-depth as well as broad-based knowledge in integrated circuit design.

Further details at **www.seng.ust.hk/msc/icde**

Master of Science (MSc) in Telecommunications

The program is designed to equip participants with an in-depth and up-to-date technical knowledge based on the latest topics in wireless systems, optical networking, broadband multimedia communications, and convergence protocols.

Further details at **www.seng.ust.hk/msc/telc**