

Master of Science in 

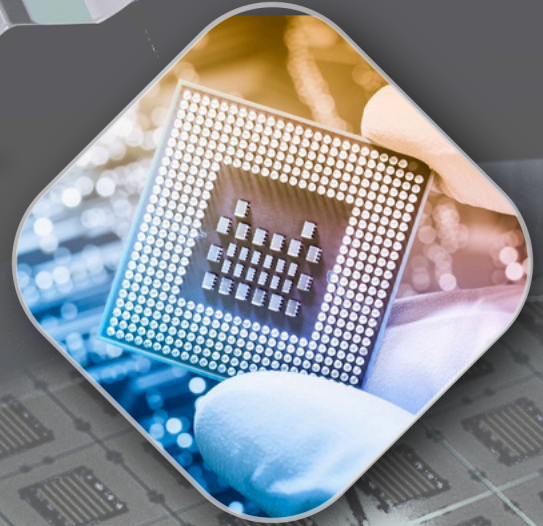
# Microelectronics and Quantum Systems Engineering





## Programme Objectives

Microelectronics is pivotal in reshaping the semiconductor industry. The Master of Science in Microelectronics and Quantum Systems Engineering is an interdisciplinary initiative, providing students with essential expertise for success in this evolving industry. Specialized training includes multidisciplinary engineering subjects tailored for the future semiconductor industry. The curriculum offers flexibility, allowing students to tailor their educational journey with a variety of subjects, aligning their studies with their career aspirations.



Programme  
code:  
**46013**

Mode of study:  
**1-year full-time**  
(2.5-year part-time)

Credit  
requirement:  
**31\***

Tuition fee:  
**HK\$ 7,700**  
(per credit)

\*A total of 30 academic credits and 1 AIE subject credit are required for graduation (3-credit/subject, 6-credit/project).

## Subject List

### CORE SUBJECTS

- Microelectronic Devices and Fabrication
- The Physics of Semiconductor
- Microphotonics and Quantum Photonic Systems
- Wafer Fabrication and Laboratory
- Design and Simulation of Photonic Circuits
- Introduction to Wide-bandgap Semiconductors

### ELECTIVE SUBJECTS

- Quantum Microdevices
- VLSI Technology and Design
- Micro- and Nano-photonic Semiconductor Devices
- RF and Microwave Integrated Circuits for Communication System Applications
- Managing Innovation
- Introduction to Quantum Physics
- Fundamental Quantum Information
- Quantum Optics
- Introduction to Quantum Computing
- Quantum Communication
- Advanced Optical Communication system
- Lasers
- Optoelectronic Devices
- MEMS (Microelectromechanical Systems) and Sensors
- Research Project





## Admission Requirements

- A Bachelor's degree in electrical and electronic engineering or related disciplines
- Fulfill the English language requirements of PolyU postgraduate programmes
- Preference will be given to applicants with relevant work experience in microelectronics industries

Please refer to <https://www.polyu.edu.hk/study/pg/tpg/2025/46013-mq-mqt> for details.



## Career Prospects

Graduates of this programme will have in-depth knowledge, skills, and experience needed to succeed in the rapidly evolving field of microelectronics technology with multidisciplinary engineering modules for the future semiconductor industry.

### Relevant Companies





## About the University

The Hong Kong Polytechnic University (PolyU) is a comprehensive university. Established in 1937, it is a member of university alliances such as the Beijing-Hong Kong University Alliance (BHUA), the Shanghai-Hong Kong University Alliance (SHUA), the Guangdong-Hong Kong-Macao University Alliance (GHMUA). It is accredited by AACSB and EQUIS. It ranked 57th in the world (in 2025 QS World University Rankings). PolyU is committed to nurturing innovative world citizens who are willing to take on social responsibilities; creating a relaxed, rich, and interdisciplinary educational environment.

香港理工大學（理大）是一所綜合大學。創立於1937年，是京港大學聯盟、滬港大學聯盟、粵港澳高校聯盟、中歐商校聯盟等高校聯盟的成員，並通過AACSB、EQUIS認證。2025年QS世界大學排名第57。香港理工大學致力於培育富於創新、勇於承擔社會責任的世界公民；營造寬鬆，豐富，多學科交叉教育環境。



### Application Deadline

Early Round Application Deadline: 19 November 2024  
Main Round Application Deadline: 30 April 2025

### Commencement of Study

Early September 2025

### Enquiry

Programme Leader:  
**Dr Helen CAI**  
Email: [helen.cai@polyu.edu.hk](mailto:helen.cai@polyu.edu.hk)

General Enquiry:  
**EEE General Office**  
Email: [eee.tpg@polyu.edu.hk](mailto:eee.tpg@polyu.edu.hk)

### Website

Online applications can be submitted through this website:  
<https://www.polyu.edu.hk/study/pg/tpg/2025/46013-mq-mqt>

