



THE HONG KONG  
POLYTECHNIC UNIVERSITY  
香港理工大學



DEPARTMENT OF  
ELECTRICAL AND  
ELECTRONIC ENGINEERING  
電機及電子工程學系

Master of Science in 

# Microelectronics and Quantum Systems Engineering



Opening Minds • Shaping the Future  
啟迪思維 • 成就未來

## 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:  
**30**

Tuition fee:  
**HK\$ 7,000**  
(per credit)

A total of 30 credits 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-phonic 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 Systems
- Lasers
- 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/2024/46013-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 65th in the world (in 2024 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）是一所綜合性大學。創建於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。2024年QS世界大學排名第65。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



30 April 2024

Commencement of Study



Early September 2024

Enquiry



Programme Leader:  
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Website



Online applications can be submitted  
through this website:  
<https://www.polyu.edu.hk/study/pg/tpg/2024/46013-mq-mqt>



*This programme is offered subject to approval.*