Master of Science in Intelligent Semiconductor Manufacturing

理學碩士（智能半導體製造）

Full-time (1 Year)/ Part-time (2 Years)
Programme Code: P86

Semiconductors are everywhere – from the processor and AI chips in our smartphones to electronic devices for electric and autonomous vehicles, to new sensors for healthcare. Training required for manufacturing and semiconductor technology is developing rapidly in a wide range of fields. Besides the semiconductor manufacturing process, the semiconductor industry is capital-intensive and must focus on realistic needs for manufacturing intelligence, including new fab construction, technology migration, capacity transformation and expansion, tool procurement, and outsourcing. Recently, semiconductor manufacturing has also become a global geopolitical battleground. Thus, there is a need for professional education to train engineers in Hong Kong and mainland China to acquire the capabilities of intelligent and semiconductor manufacturing.

Programme Aims

The programme is designed to provide students with knowledge/skills in process control/operations, electronic and advanced packaging technologies, and materials in intelligent and semiconductor manufacturing and its related reliability science and quality engineering. Ability to solve problems and develop new processes or equipment. Students are encouraged to participate the projects with the companies. The objective of this programme is to prepare students who wish to pursue graduate degrees or enter the workforce in the field of semiconductor and electronics industry.

Programme Structure

You can obtain an MSc degree by completing courseworks only, or by combining courseworks with a dissertation project.

- 4 core courses + 6 elective courses
- 4 core courses + 3 elective courses + dissertation

Core Courses

- Quality and Reliability Engineering
- 3D IC Stacking and Advanced Packaging
- Semiconductor Manufacturing and Management
- Semiconductor Process Equipment and Materials

Selected Elective Courses

- Project Management
- Quality Improvement: Systems and Methodologies
- VLSI/ULSI Process Integration
- Technological Innovation and Entrepreneurship
- Intelligent Manufacturing for Engineering Managers
- Process Modelling and Control

For a full list of elective courses, please visit www.cityu.edu.hk/sye/mssm/

English Proficiency Requirement

Non-local candidates from an institution where the medium of instruction is not English should fulfil one of the following English proficiency requirements:

- a score of 59 (revised paper-delivered test)^ or 79 (Internet-based test) on the Test of English as a Foreign Language (TOEFL)@#; or
- an overall band score of 6.5 in the International English Language Testing System (IELTS)@; or
- a score of 450 in the Chinese mainland's College English Test Band 6 (CET-6); or
- other equivalent qualifications.

^ Effective from 11 April 2021, the TOEFL revised paper-delivered test is no longer offered.
TOEFL and IELTS scores are considered valid for two years. Applicants are required to provide their English test results obtained within the two years preceding the start of the University's application period.

Applicants are required to arrange with the Educational Testing Service (ETS) to send their TOEFL results directly to the University. The TOEFL institution code for CityU is 3401.

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