Master of Philosophy (MPhil) Program in Innovative Technologies Leadership

Curriculum for Master of Philosophy (MPhil) Program in Innovative Technologies Leadership

The Master of Philosophy (MPhil) program is designed to introduce a high quality, multi-disciplinary educational research program in niche areas that are relevant to the sustainable development of Hong Kong and Mainland China; and to train technology leaders for Hong Kong, Pearl River Delta (PRD) Region and beyond.

The MPhil (ITL) program aims to provide students with necessary professional knowledge in three technology areas, and to cultivate strong analytical, managerial, and leadership skills to prepare engineers to become technology leaders of the future. Not only can students take innovative technologies courses in postgraduate level offered by the School, they can also take approved electives of their interests offered by other schools.

All students are required to station at Clearwater Bay campus for their first year of study to complete all coursework. For the second year, students will be stationed primarily at Nansha campus to receive practical training at research centers or mainland industries, and to complete their MPhil thesis under the supervision of their adviser.

Program Requirements

Students are required to complete at least 17 credits of coursework including:

a) Core Course Requirement:
   - FYTG 5001 Technology Leadership and Entrepreneurship
   - FYTG 5002 Humanities and Leadership

b) Concentration Requirement:
   The program composes of the following three concentrations. Students are required to complete at least two courses (6 credits) from their chosen concentration.

   i) Internet of Things (IOT)
      - FYTG 5100 Advanced Topics of Internet of Things
      - FYTG 5101 Data-Driven Processing
      - FYTG 5102 Data Center and Cloud Computing

   ii) Advanced Manufacturing and Materials (AMM)
      - FYTG 5200 Advanced Manufacturing and Systems
      - FYTG 5201 Process Control, Optimization and Design
      - FYTG 5412 Advanced Engineering Materials
      - FYTG 5413 Advanced Materials for Microelectronics Manufacturing and Reliability

iii) Energy and Environment (ENEV)

FYTG	5300	Atmosphere Ocean Environmental Monitoring and Analysis
FYTG	5301	Numerical Atmosphere-Ocean Modeling
FYTG	5310	Green Building Technology
FYTG	5311	Electrochemical Energy Conversion and Storage

c) Elective Requirement

Subject to the recommendation and prior approval from supervisor and relevant departments/instructors, students may take 6 credits (2 courses) of 5000-level or above PG courses offered by FYTGS, the School of Engineering, the School of Science, or the Division of Environment.

Subject to the prior approval of the Program Director, students may be granted credit transfer for a maximum of 9 credits to the program.

d) Practical Training

Students are required to undergo two terms of practical training by working as an intern. Industrial training opportunities will be provided through research centers of the Fok Ying Tung Research Institute, or mainland enterprises. During the practicum periods, students will maintain their regular full-time student status. Students are allowed to start this course (FYTG 6100) in any academic term. Students are required to submit a written report summarizing the training activities and outcomes to the supervisors at the end of each term. The one credit earned cannot be counted toward the degree requirements.

e) Postgraduate Research Seminar

Students are required to take a one-credit compulsory FYTG 6000 Postgraduate Research Seminar for one term during their study. Depending on the students' research interests, they can take seminars from different concentrations.

f) Language Requirement

Students are required to take and pass LANG 5001 Postgraduate English for Academic Purpose, while they are stationed at the Clear Water Bay campus. The one credit earned from LANG 5001 cannot be counted towards the credit requirements.

g) MPhil Thesis Research

Students are required to register in FYTG 6990 MPhil Thesis Research, submit an MPhil thesis related to their chosen concentrations, and defend it before the thesis examination committee at HKUST Clear Water Bay campus.