FACULTY OF ENGINEERING
Information Engineering
Study Scheme

M.Phil. – Ph.D. Programme in Information Engineering (Full-time and Part-time)

Please read the Study Scheme in conjunction with the following emails:

1. "Completing certain Improving Postgraduate Learning modules in the first year of study (for fulfilment of Ph.D. and Taught Doctoral candidacy requirements) with retroactive effect from 2022-23 intake", dated 27 October 2023: https://www.gs.cuhk.edu.hk/download/IPL.pdf.

2. "Amendments to Research Data Management Practice and Requirements for Candidacy and Graduation -- applicable to RPg and taught doctoral students admitted in 2025/26 or thereafter", dated 20 February 2026: https://www.gs.cuhk.edu.hk/download/Amendments.pdf.

(Applicable to students admitted in 2022-23)

A. M.Phil. Student

1. Coursework Requirement

(a) Lecture courses

Students are required to pass at least four courses from the Department of Information Engineering Course List given at the end of this handbook. Courses outside the course list may be selected on the recommendation of the thesis supervisor and with the approval of the Division Head. These courses need to be taken within the first three terms (or four terms for part-time students), unless an exemption is given by the Division Head.

(b) Thesis research/monitoring courses

M.Phil. students must register for the relevant thesis research course in every term throughout his/her study period.
- Full-time M.Phil. students: IERG8006
- Part-time and Continuing M.Phil. students: IERG8003

2. Other Requirements

(a) Students must fulfill the Term Assessment Requirement of the Graduate School. For details, please refer to Clause 13.0 "Unsatisfactory Performance and Discontinuation of Studies" of the General Regulations Governing Postgraduate Studies which can be accessed from the Graduate School Homepage: https://www.gs.cuhk.edu.hk.

(b) Students are required to submit a research thesis and pass an oral examination for graduation.

(c) Complete an Improving Postgraduate Learning (IPL) module on "Observing Intellectual Property and Copyright Law during Research". This is an online module and relevant information can be accessed from the website: https://www.cuhk.edu.hk/clear/prodev/ipl.html.

(d) Students are required to attend an IPL module on "General Safety". Students who are prescribed laboratory safety training shall take the course and, where appropriate, examinations in their first year of study, with effect from the 2022-23 intake. Students should consult Division for details.

(e) Complete an IPL module on "Research Data Management Training". This is an online module and relevant information can be accessed from the website: https://www.cuhk.edu.hk/clear/download/IPL-Researchskills.pdf. Students are required to complete and pass the module in their first year of studies, with effect from the 2022-23 intake.

(f) Students are required to complete an online Research Ethics Training (RET) module on "Publication Ethics" offered by the Office of Research and Knowledge Transfer Services (ORKTS) and obtain a valid Publication Ethics Certificate for graduation. Relevant information can be accessed from the RET website at https://www.research-ethics.cuhk.edu.hk/web/.

Department of Information Engineering Course List

Code	*Course Title*	*Unit*
IERG5020	Telecommunication Switching and Network System	3
IERG5040	Lightwave System Technologies	3
IERG5050	AI Foundation Models, Systems and Applications	3
IERG5090	Advanced Networking Protocols and Systems	3
IERG5100	Advanced Wireless Communications	3
IERG5110	Signal Processing in Wireless Communications and Sensing	3
IERG5130	Probabilistic Models and Inference Algorithms for Machine Learning	3
IERG5200	Channel Coding and Modulation	3
IERG5230	Algorithms and Realization of Internet of Things Systems	3
IERG5240	Applied Cryptography	3
IERG5250	Edge AI and Applications	3
IERG5254	Network Information Theory	3
IERG5280	Wireless and Mobile Networking	3
IERG5290	Network Coding Theory	3
IERG5300	Random Processes	3
IERG5310	Security and Privacy in Cyber Systems	3
IERG5320	Digital Forensics	3
IERG5340	IT Innovation and Entrepreneurship	3
IERG5350	Reinforcement Learning	3
IERG5360	Program Representation, Modeling and Understanding for Software Security	3
IERG5380	Quantum Information Processing	3
IERG5400	Theory of Probability	3
IERG5450	AI for Science	3
IERG5460	Multimodal Machine Learning	3
IERG5470	Convex and Stochastic Optimization and their Applications	3
IERG5590	Advanced Topics in Blockchain	3
IERG5670	Computational Imaging Systems and Algorithms	3
IERG6120	Advanced Topics in Information Engineering I	3
IERG6130	Advanced Topics in Information Engineering II	3
IERG6154	Network Information Theory	3
IERG6200	Advanced Topics in Computer Networks	3
IERG6210	Advanced Topics in Information Processing	3
IERG6270	Advanced Wireless Communications	3
IERG6280	Network Economics	3

IERG8003	Thesis Research	3
IERG8006	Thesis Research	6
IERG8012	Thesis Research	12

Faculty of Engineering Core Course List

Code	*Course Title*	*Unit*
ENGG5101	Advanced Computer Architecture	3
ENGG5103	Techniques for Data Mining	3
ENGG5104	Image Processing and Computer Vision	3
ENGG5105	Computer and Network Security	3
ENGG5106	Information Retrieval and Search Engines	3
ENGG5108	Big Data Analytics	3
ENGG5281	Advanced Microwave Engineering	3
ENGG5202	Pattern Recognition	3
ENGG5282	Nanoelectronics	3
ENGG5291	Fiber Optics: Principles and Technologies	3
ENGG5301	Information Theory	3
ENGG5303	Advanced Wireless Communications	3
ENGG5383	Applied Cryptography	3
ENGG5392	Lightwave System Technologies	3
ENGG5402	Advanced Robotics	3
ENGG5403	Linear System Theory and Design	3
ENGG5404	Micromachining and Microelectromechanical Systems	3
ENGG5501	Foundations of Optimization	3
ENGG5601	Principles of Biomechanics and Biomaterials	3
ENGG5781	Matrix Analysis and Computations	3