香港中文大學（深圳）
The Chinese University of Hong Kong, Shenzhen

Study Plan of MPhil - PhD Programme

Programme Title: MPhil-PhD in Computer and Information Engineering
Offered by: School of Science and Engineering

1. Target Participants

The Programme is designed for students who wish to pursue a higher degree in the broad area of Computer and Information Engineering (CIE), with research focus in artificial intelligence, communications and networking, computer vision, data science, digital signal processing, intelligent systems and robotics, operations research, optimization, bioinformatics, optoelectronics, photonics and physics on optics, and related domains. An applicant with a research master's degree should apply for admission to the PhD Stream, while an applicant with a bachelor degree can apply for admission to either MPhil or PhD Stream. Applicants should have education background in science and engineering.

2. Programme Information

Study Mode: Full Time

Study Period: The study period for students of different streams / stages under the framework of the new MPhil-PhD Programmes are summarized below:

Degree	Mode	Maximum Pre-Candidacy Period [1]	Normative Period	Maximum Period
MPhil	FT	--	24 months	48 months
PhD (entering with a research master's degree)	FT	24 months [2]	48 months	72 months
PhD (entering without a research master's degree)	FT	36 months [2,3]	60 months	84 months

[1] *Maximum period to pass the candidacy requirement, counted from first entry.*
[2] *A student who fails to pass the candidacy requirement within the maximum pre-candidacy period is required to withdraw from PhD study.*
[3] *A student without a master's degree who fails to pass the candidacy requirement within the maximum pre-candidacy period is allowed to switch to MPhil study.*

3. Course Requirement for MPhil Students

For MPhil students, total number of units required for graduation within normative study period is:

MPhil students	Lecture Courses [1]	3 units×6 courses = 18 units
	Thesis Research Courses [2]	6 units ×4 terms = 24 units

[1] *At least 12 units/4 courses taken from Group A*

[2] *Students should submit a research progress report on March 1 and September 1 every year respectively*

3.1 Lecture Courses

For MPhil students, minimum of 18 units/6 courses are required from the list of lecture courses (given in Appendix), with at least 12 units/4 courses to be selected from Group A and the rest from Group B.

3.2 Thesis Research Courses

Students MUST register and take thesis research courses that have 6 units in each term, and submit a research progress report on March 1 and September 1 every year respectively. The minimum requirement is listed below.

Course code	Course Title	Units	Contact Hours	Minimum Grade
--	Thesis Research	6	84	C

There are some other courses offered as below.

Course code	Course Title	Units	Contact Hours	Minimum Grade
--	Research Methodology and Ethics	0	42	Pass
--	Research Seminars	0	--	Pass
--	Thesis Writing, and Presentation	0	21	Pass

3.3. Thesis Defense

An MPhil candidate is required to pass an oral examination held by the thesis assessment committee, which will consist of one external examiner selected globally, one CUHK faculty member, and a few CUHK (SZ) academic staffs as determined by the Graduate Panel. The external examiner is not required to attend the oral examination of an MPhil candidate.

4. Course Requirement for PhD Students

During the pre-candidacy and candidacy stage, PhD candidates have to complete a minimum number of units for lecture courses and thesis research courses every term. However, since the study period of students may vary, the total number of units for thesis research courses to be taken may also vary, which will affect the total number of units taken by each student for graduation.

For PhD students with a research master's degree, total number of units required for graduation within normative study period is:

Pre-candidacy Stage (2 years):	Lecture Courses [1,2]	3 units ×9 courses = 27 units
	Thesis Research Courses [3]	6 units ×4 terms = 24 units
Candidacy Stage (2 years):	Thesis Research Courses [3]	12 units ×4 terms = 48 units

For PhD students without a research master's degree, total number of units required for graduation within normative study period is:

Pre-candidacy Stage (3 years):	Lecture Courses [1,2]	3 units ×9 courses = 27 units
	Thesis Research Courses [3]	6 units ×6 terms = 36 units
Candidacy Stage (2 years):	Thesis Research Courses [3]	12 units ×4 terms = 48 units

[1] *At least 18 units/6 courses taken from Group A*

[2] *Students can submit the postgraduate transcript and apply for waive of up to 3 courses (9 units)*

[3] *Students should submit a research progress report on March 1 and September 1 every year respectively*

4.1 Lecture Courses

For PhD students at pre-candidacy stage, minimum of 27 units/9 courses are required from the list of lecture courses (given in Appendix), with at least 18 units/6 courses to be selected from Group A and the rest from Group B.

For a student with a research master's degree, he/she can submit the postgraduate transcript and apply for waive of up to 3 lecture courses (9 units). The Graduate Panel shall decide whether an application of waiving any course should be approved, and whether the course waived should be counted into Group A or Group B.

4.2 Thesis Research Courses

For PhD students at pre-candidacy stage and candidacy stage, students MUST register, take thesis research courses that have 6 units and 12 units respectively in each term and submit a research progress report on March 1 and September 1 every year respectively. The minimum requirement is listed below.

Stage	Course Title	Units	Contact Hours	Minimum Grade
Pre-candidacy Stage	Thesis Research	6	84	C
Candidacy Stage	Thesis Research	12	168	C

There are some other courses offered as below.

Stage	Course Title	Units	Contact Hours	Minimum Grade
Pre-candidacy Stage	Research Methodology and Ethics	0	42	Pass
	Research Seminars	0	--	Pass
	Thesis Writing, and Presentation	0	21	Pass
Candidacy Stage	Research Seminars	0	--	Pass

4.3 Thesis Defense

A PhD candidate is required to pass an oral examination held by the thesis assessment committee, which will consist of one external examiner selected globally, one CUHK faculty member, and a few CUHK(SZ) academic staffs as determined by the Graduate Panel. The external examiner is required to participate in the oral examination, either in person or through teleconferencing.

Appendix

Group A:

Course code	Course Title	Units	Contact Hours	Minimum Grade
CIE 6001	Social Computing	3	42	C
CIE 6002	Matrix Analysis	3	42	C
CIE 6003	Advanced Computer Architecture	3	42	C
CIE 6004	Image Processing and Computer Vision	3	42	C
CIE 6005	Stochastic Process	3	42	C
CIE 6006	Data Analytics	3	42	C
CIE 6007	Machine Learning	3	42	C
CIE 6010	Optimization Theory and Algorithms	3	42	C
CIE 6011	Optical Communication and Interconnects	3	42	C
CIE 6012	Computer and Network Security	3	42	C
CIE 6013	Mobile Networking	3	42	C
CIE 6014	Advanced Wireless Communications	3	42	C
CIE 6015	Advanced Topics in Signal Processing	3	42	C
CIE 6020	Selected Topics in Information Theory	3	42	C
CIE 6021	Selected Topics in Artificial Intelligence	3	42	C
CIE 6022	Dynamic Programming	3	42	C
CIE 6023	Introduction of Reinforcement Learning	3	42	C
CIE 6024	Selected Topics in Deep Learning and Their Applications	3	42	C
CIE 6030	Selected Topics in Stochastic Control	3	42	C
CIE 6032	Selected Topics in Deep Learning Foundations and Their Applications	3	42	C
CIE6035	Regularization/Kernel Methods: Theory for the Users	3	42	C
CIE6036	Network Economics	3	42	C
CIE6134	RF Circuits and Systems	3	42	C

Group B:

Course code	Course Title	Units	Contact Hours	Minimum Grade
CIE 6102	Topics in Computer-Aided Geometric Design	3	42	C
CIE 6103	Physics of Photonic Devices	3	42	C
CIE 6105	Control Systems	3	42	C
CIE 6107	Robotics and Intelligent Systems	3	42	C
CIE 6110	Advanced Convex Optimization	3	42	C
CIE 6115	Advanced Topics in Energy Systems	3	42	C
CIE 6120	Introduction to Detection & Estimation Theory & Application	3	42	C
CIE 6125	Selected Topics in Blockchain Systems	3	42	C
CIE 6126	Performance Analysis of Computer and Communication Systems	3	42	C
CIE 6127	Telecommunication Switching and Network Systems	3	42	C
CIE 6128	Understanding Deep Learning from a Theoretical Perspective	2	42	C
CIE 6129	Selected Topics in Cloud Computing	3	42	C
CIE 6130	Selected topics in Mobile Computing with Internet of Things	3	42	C
CIE6131	Text Representation Learning	3	42	C
CIE6132	CMOS Analog IC Design	3	42	C
CIE6133	Gaussian Process for Machine Learning and Signal Processing	3	42	C
CIE6135	Multi-Antenna Wireless Communications	3	42	C
CIE6136	The Bootstrap and Its Applications in Signal Processing	3	42	C
CIE6137	Quantum Mechanics for Engineering Application	3	42	C