



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 Materials Science and 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 Materials Science and Engineering (MSE), with a research focus on advanced structure materials, functional materials, smart materials, polymer materials, biomaterials, nanomaterials, composites, surface chemistry and interfacial engineering, materials modelling and simulation, materials production and processing, energy materials, materials for environmental purification, aerosol and nanoparticle engineering, green chemistry and materials life cycle. 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:

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

<sup>1</sup> Maximum period to pass the candidacy requirement, counted from first entry.

<sup>2</sup> A student who fails to pass the candidacy requirement within the maximum pre-candidacy period is required to withdraw from PhD study.

<sup>3</sup> 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 <sup>1,2</sup>	3 units × 6 courses = 18 units
	Thesis Research Courses <sup>3</sup>	6 units × 4 terms = 24 units

<sup>1</sup> 6 units of required courses, and 12 units of elective courses

<sup>2</sup> Student can submit undergraduate and postgraduate transcript and apply for waiver of the elective courses

<sup>3</sup> 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 6 units of required courses, and 12 units of elective courses.

#### 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	B-

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 <sup>1,2</sup>	3 units × 9 courses = 27 units
	Thesis Research Courses <sup>3</sup>	6 units × 4 terms = 24 units
Candidacy Stage (2 years):	Thesis Research Courses <sup>3</sup>	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 <sup>1,2</sup>	3 units × 9 courses = 27 units
	Thesis Research Courses <sup>3</sup>	6 units × 6 terms = 36 units
Candidacy Stage (2 years):	Thesis Research Courses <sup>3</sup>	12 units × 4 terms = 48 units

<sup>1</sup> 6 units of required courses, and 21 units of elective courses

<sup>2</sup> Student can submit undergraduate and postgraduate transcript and apply for waiver of the elective courses

<sup>3</sup> 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 6 units of required courses, and 21 units of elective courses.

Student can submit undergraduate and postgraduate transcript and apply for waiver of the elective courses. The courses to be waived must be approved by supervisor committee or programme committee.

### 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	B-
Candidacy Stage	Thesis Research	12	168	B-

There are some other courses offered as below.

<b>Stage</b>	<b>Course Title</b>	<b>Units</b>	<b>Contact Hours</b>	<b>Minimum Grade</b>
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

### Required Courses:

Course code	Course Title	Units	Contact Hours	Minimum Grade
MSE6001	Advanced Materials Science and Engineering	3	42	C
MSE6002	Engineering Economics and Management	3	42	C

### Elective Courses:

Course code	Course Title	Units	Contact Hours	Minimum Grade
MSE6101	Selected Topics in MSE	3	42	C
MSE6102	Laboratory-General	3	42	C
MSE6103	Lab Special in Materials	3	42	C
MSE6104	Computational Materials	3	42	C
MSE6105	Microstructural Evolution in Materials	3	42	C
MSE6106	Electronic, Optical, and Magnetic Properties of Materials	3	42	C
MSE6107	Advanced Ceramic Materials	3	42	C
MSE6108	Nanomaterials	3	42	C
MSE6109	Energy Materials	3	42	C
MSE6110	Green Engineering and Environmental Compliance	3	42	C
MSE6111	Materials Processing	3	42	C
MSE6112	Polymer Physics	3	42	C
MSE6201	Advanced Inorganic Chemistry	3	42	C
MSE6202	Advanced Organic Chemistry	3	42	C
MSE6203	Advanced Physical Chemistry	3	42	C
MSE6204	Advanced Analytical Chemistry	3	42	C
MSE6205	Advanced Polymer Chemistry	3	42	C
MSE6206	Advanced Biochemistry	3	42	C
MSE6207	Advanced Computational Chemistry	3	42	C
MSE6208	Principles of Chemical Engineering	3	42	C
MSE6209	Chemical Reaction Engineering	3	42	C

MSE6210	Transport Phenomena	3	42	C
MSE6211	Thermodynamics and Kinetics	3	42	C
MSE6301	Quantum Mechanics	3	42	C
MSE6302	Theoretical Mechanics	3	42	C
MSE6303	Solid-State Physics	3	42	C
MSE6304	Statistical Physics	3	42	C
MSE6305	Electrodynamics	3	42	C
MSE6306	Physics of Semiconductors Devices	3	42	C
MSE6307	Magnetism and Spintronic	3	42	C
MSE6308	Optoelectronics	3	42	C
MSE6401	Fluid Mechanics	3	42	C
MSE6402	Mathematical Modeling	3	42	C
MSE6403	Tissue Engineering	3	42	C
MSE6501	Research Inquiry and Literature Study	3	42	C