

Study Plan of MPhil - PhD Programme

Programme Title: MPhil-PhD in Energy 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 Energy Science and Engineering (ENE), with a research focus on multi-dimensional energy theory, fusing and restructuring complex learning related to energy, generate clean and sustainable energy, etc. 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	48 months	72 months
PhD (entering without a research master's degree)	FT	36 months	60 months	84 months

¹ Maximum period to pass the candidacy requirement, counted from first entry.

Requirement for MPhil Students

1. Course Requirement

MPhil students within Normative Study Period (2 years)	Lecture Courses	3 units × 6 courses = 18 units
	Thesis Research Courses -ENE6511 Thesis Research-	6 units × 4 terms = 24 units
	Other Courses -ENE6531 Research Seminars- -ENE6521 Research Methodology and Ethics- -ENE6541 Thesis Writing, and Presentation-	0 units × 4 terms = 0 units 0 units × 1 term = 0 units 0 units × 1 term = 0 units
	Civic Education Courses	Refer to the official notice from HSS
MPhil Students Exceeding Normative Study Period (2 years)	Thesis Research Courses -ENE6511 Thesis Research-	6 units × 4 terms = 24 units

1.1. Lecture Courses

1.1.1. Course Requirement

- A minimum of 18 units are required from the following list of lecture courses, with **at least 3 units** to be selected from Group A and the rest from Group B.
- Up to 3 courses from Group B can be replaced by courses in other postgraduate programmes at CUHK(SZ) subject to the endorsement by supervisors and the approval by Graduate Panel.

1.1.2. Course Exemption

- Students can submit the prescribed application form with any required supporting documents and apply for exemption for at most-two courses (up to 6 units) from Group B. The application should be approved by the Dean of the Graduate School after the endorsement of the Programme Coordinator and the Panel Chair.

1.2. Thesis Research Course

Students **MUST** register for thesis research courses in each term, and submit a research progress report in March and September every year respectively. The minimum requirement is listed below.

Course code	Course Title	Units	Contact Hours	Minimum Grade
ENE6511	Thesis Research	6	84	B-
A student is required to meet with his/her supervisor regularly who provides necessary guidance and supervision on the student's thesis research and monitors his/her academic progress. The minimum grade requirement of this course is "B-".				

1.3. Other Courses

Course code	Course Title	Units	Contact Hours	Minimum Grade
ENE6521	Research Methodology and Ethics	0	42	Pass
ENE6531	Research Seminars	0	--	Pass
ENE6541	Thesis Writing, and Presentation	0	21	Pass

1.4. Civic Education

Please refer to the official notice from HSS.

2. Progress towards Graduation

Please refer to <https://gs.cuhk.edu.cn/sites/gprod.dpsite02.cuhk.edu.cn/files/2022-11/COP%205%20RPG-Oct.2022.pdf>

3. Other Information

Code of Practice Research Postgraduate Studies refers to <https://gs.cuhk.edu.cn/RPG>

Requirement for PhD Students

1. Course Requirement

PhD candidates have to complete a minimum number of units for lecture courses and thesis research courses (every term) during the pre-candidacy and candidacy stage. However, since the study period of students may vary, the total number of 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	3 units × 9 courses = 27 units
	Thesis Research Courses <i>-ENE6511 Thesis Research-</i>	6 units × 4 terms = 24 units
	Other Courses <i>-ENE6531 Research Seminars-</i> <i>-ENE6521 Research Methodology and Ethics-</i> <i>-ENE6541 Thesis Writing, and Presentation-</i>	0 units × 4 terms = 0 units 0 units × 1 term = 0 units 0 units × 1 term = 0 units
	Civic Education Courses	Refer to the official notice from HSS
Candidacy Stage (2 years)	Thesis Research Courses <i>-ENE6511 Thesis Research-</i>	12 units × 4 terms = 48 units
	Other Course <i>-ENE6531 Research Seminars-</i>	0 units × 4 terms = 0 units
	Civic Education Courses	Refer to the official notice from HSS
PhD Students Exceeding Normative Study Period (2 years)	Thesis Research Courses <i>-ENE6511 Thesis Research-</i>	12 units × 4 terms = 48 units
	Other Course <i>-ENE6531 Research Seminars-</i>	0 units × 4 terms = 0 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	3 units × 9 courses = 27 units
	Thesis Research Courses <i>-ENE6511 Thesis Research-</i>	6 units × 6 terms = 36 units
	Other Courses <i>-ENE6521 Research Methodology and Ethics</i> <i>-ENE6531 Research Seminars-</i> <i>-ENE6541 Thesis Writing, and Presentation</i>	0 units × 6 terms = 0 units 0 units × 1 term = 0 units 0 units × 1 term = 0 units
	Civic Education Courses	Refer to the official notice from HSS
Candidacy Stage (2 years)	Thesis Research Courses <i>-ENE6511 Thesis Research-</i>	12 units × 4 terms = 48 units
	Other Course <i>-ENE6531 Research Seminars-</i>	0 units × 4 terms = 0 units
	Civic Education Courses	Refer to the official notice from HSS
PhD Students Exceeding Normative Study Period (2 years)	Thesis Research Courses <i>-ENE6511 Thesis Research-</i>	12 units × 4 terms = 48 units
	Other Course <i>-ENE6531 Research Seminars-</i>	0 units × 4 terms = 0 units

1.1. Lecture Courses

1.1.1. Course Requirement

- A student will have to complete 27 units of lecture courses as part of the candidacy requirement. **At least 3 units** should be selected from Group A, and the rest can be selected from Group B. The course list can be found in the appendix.
- Up to 4 courses from Group B can be replaced by courses in other postgraduate programmes at CUHK(SZ) subject to the endorsement by supervisors and the approval by Graduate Panel.

1.1.2. Course Exemption

- Students can submit the prescribed application form with any required supporting documents and apply for exemption for at most three courses (up to 9 units) from Group B. The application should be approved by the Dean of the Graduate School after the endorsement of the Programme Coordinator and the Panel Chair.

1.2. Thesis Research Courses

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

Stage	Course Title	Units	Contact Hours	Minimum Grade
Pre-candidacy Stage	ENE6511 Thesis Research	6	84	B-
Candidacy Stage	ENE6511 Thesis Research	12	168	B-
Exceeding Normative Study Period	ENE6511 Thesis Research	12	168	B-

A student is required to meet with his/her supervisor regularly who provides necessary guidance and supervision on the student's thesis research and monitors his/her academic progress. The minimum grade requirement of this course is "B-".

1.3. Other Courses

Stage	Course Title	Units	Contact Hours	Minimum Grade
Pre-candidacy Stage	ENE6521 Research Methodology and Ethics	0	42	Pass
	ENE6531 Research Seminars	0	--	Pass
	ENE6541 Thesis Writing, and Presentation	0	21	Pass
Candidacy Stage	ENE6531 Research Seminars	0	--	Pass
Exceeding Normative Study Period	ENE6531 Research Seminars	0	--	Pass

1.4. Civic Education

Please refer to the official notice from HSS.

2. Candidacy Examination

Each PhD student will have to attend a candidacy examination before the end of the maximum pre-candidacy period. Candidacy examination will be comprehensive and rigorous, including two parts:

Part I - A comprehensive written examination.

Part II - Thesis proposal and oral defence of the thesis proposal.

A student must pass both parts of the Candidacy Examination. The examination should be passed by the end of 24 months from the first entry for students with research master's degree or 36 months from the first entry for students without research master's degree.

3. Progress towards Graduation

Please refer to <https://gs.cuhk.edu.cn/sites/gs.prod.dpsite02.cuhk.edu.cn/files/2022-11/COP%205%20RPG-Oct.2022.pdf>

4. Other Information

Code of Practice Research Postgraduate Studies refers to <https://gs.cuhk.edu.cn/RPG>

Appendix

Group A:

Course code	Course Title	Units	Contact Hours	Minimum Grade
ENE6001	Electrical Power Systems	3	42	C
ENE6002	Smart Grid	3	42	C
MSE6503	Energy and Environmental Materials	3	42	C
MSE6504	Materials in Energy Storage	3	42	C

Group B:

Course code	Course Title	Units	Contact Hours	Minimum Grade
CHM6549	Energy-related Electrochemical Principle and Technology	3	42	C
CHM6820	Computational Chemistry in Energy Storage and Conversion	3	42	C
CIE6007	Machine Learning	3	42	C
CIE6010	Optimization Theory and Algorithms	3	42	C
ENE6011	Power Electronics	3	42	C
ENE6012	Energy Economics	3	42	C
ENE6013	Electrical Machines	3	42	C
ENE6014	Big Data in Smart Grid	3	42	C
ENE6015	Applications of Artificial Intelligence in Energy Systems	3	42	C
ENE6016	Fundamentals of Power Semiconductor Devices	3	42	C
ENE6031	Solar Energy Engineering	3	42	C
ENE6032	Wind and Hydropower Energy Conversion	3	42	C
ENE6033	Geothermal Science and Technology	3	42	C
ENE6041	Nuclear Energy and Risk Assessment	3	42	C
ENE6042	Electromagnetic Theory and Method for Earth Physics	3	42	C
ENE6043	Principle and Application of Intelligent Detection Instrument	3	42	C
ENE6044	Electrodynamics II	3	42	C
ENE6045	Assembly, Test and Analysis of Metal Ion Batteries	3	42	C
ENE6046	Rechargeable Metal Ion Batteries and Materials	3	42	C
MSE5121	Solid-State Physics	3	42	C
MSE6203	Advanced Physical Chemistry	3	42	C
MSE6211	Thermodynamics and Kinetics	3	42	C
MSE6548	Techniques for Materials Characterization	3	42	C
PHY5410	Advanced Quantum Mechanics	3	42	C
PHY6100	Semiconductor Physics	3	42	C
PHY6301	Fluid Mechanics	3	42	C