

B. Ph.D. Student (Pre-candidacy)

The “candidacy requirement” composes of three major parts, namely, **Coursework Requirement, Candidacy Examination, and Thesis Proposal (and Oral Defence)**. Students must complete and fulfill all three parts within the “maximum period for fulfilling candidacy requirements”. Details of the requirement are listed below:

1. Coursework Requirement

(a) Lecture courses

1. At least one Engineering Faculty core course must be taken.
2. To satisfy the Faculty core course requirement, students must achieve at least a grade B in the course. Otherwise, the course will only be counted as an elective.
3. Ph.D. students have to take at least 12 units of 4 graduate courses.

Courses outside the Department Course List or Engineering Faculty Core Course List may be selected on the recommendation of the thesis supervisor with the approval of the Division Head. The courses need to be taken normally within the first two terms but should not be more than three terms (or four terms for part-time students) unless with the approval of the Division Head.

(b) Thesis research courses

Each Ph.D. student must register for the relevant Thesis Research Course in every term throughout his/her study period.

- Full-time Ph.D. (pre-candidacy) students: IERG8006
- Part-time Ph.D. (pre-candidacy) students: IERG8003

2. Candidacy Examination (To be taken at the end of the first year or the first month of the second year)

Each Ph.D. student is required to pass an oral-plus-written examination to be taken at the end of the first year or the first month of the second year. For this exam, a written report is compulsory component. It will be graded by the Research Monitoring Examination Committee members. The grade for the written component will be combined with the grade of the oral component to arrive at the final decision as to whether the student passes the examination. The written report and the subsequent oral presentation can be based on the student's result so far, or based on the study of a set of papers drawn from an approved list. Although actual presentation of research results is not expected, the general knowledge and the research potential of the student in the chosen area will be tested.

Outcomes

The Research Monitoring Examination Committee would recommend the following four possible decisions:

- (i) Pass
- (ii) Weak Probation*
- (iii) Strong Probation*

(iv) Fail*

Remarks:

Penalty will be imposed with outcome marked with * (Please refer to the website <https://intraweb.ie.cuhk.edu.hk/v3/pg/>)

3. *Thesis Proposal and Oral Defence* (To be taken at the end of the second year)

Each Ph.D. student must submit a research proposal and pass an oral examination. The examination panel should be set up according to Division guideline.

4. *Remarks*

For the advancement to his/her post-candidacy stage, each Ph.D. student is required to pass:

- (a) Coursework requirement.
- (b) Candidacy examination. (To be taken at the end of the first year or the first month of the second year)
- (c) Thesis proposal and oral defence. (To be taken at the end of the second year)

Department Course List

<u>Code</u>	<u>Course Title</u>	<u>Unit</u>
IERG5020	Telecommunication Switching and Network System	3
IERG5040	Lightwave System Technologies	3
IERG5090	Advanced Networking Protocols and Systems	3
IERG5100 (IERG 6270)	Advanced Wireless Communications	3
IERG5130	Probabilistic Models and Inference Algorithms for Machine Learning	3
IERG5140	Lightwave Networks	3
IERG5154	Information Theory	3
IERG5200	Channel Coding and Modulation	3
IERG5230	Algorithms and Realization of Internet of Things Systems	3
IERG5240	Applied Cryptography	3
IERG5280	Mobile Networking	3
IERG5290	Network Coding Theory	3
IERG5300	Random Processes	3
IERG5310	Security and Privacy in Cyber Systems	3
IERG5320	Digital Forensics	3
IERG5330 (IERG6280)	Network Economics	3
IERG5340	IT Innovation and Entrepreneurship	3
IERG5350	Reinforcement Learning	3
IERG5590	Advanced Topics in Blockchain	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
IERG6300	Theory of Probability	3
IERG8003	Thesis Research	3
IERG8006	Thesis Research	6
IERG8012	Thesis Research	12

Engineering Faculty Core Course List

<u>Code</u>	<u>Course Title</u>	<u>Unit</u>
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
ENGG5189	Advanced Artificial Intelligence	3
ENGG5281	Advanced Microwave Engineering	3
ENGG5202	Pattern Recognition	3
ENGG5282	Nanoelectronics	3
ENGG5291	Fiber Optics: Principles and Technologies	3
ENGG5301	Information Theory	3
ENGG5302	Random Processes	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
ENGG5405	Theory of Engineering Design	3
ENGG5501	Foundations of Optimization	3
ENGG5601	Principles of Biomechanics and Biomaterials	3
ENGG5781	Matrix Analysis and Computations	3

Remark:

() Denote the course code offered in 2012-13 and before.