The Chinese University of Hong Kong, Shenzhen

Proposal for M.Phil. - Ph.D. Programme

Programme Title	(English) M.Phil. - Ph.D. in Artificial Intelligence (Chinese) 人工智能哲學碩士博士銜接課程
2025-26	

M.Phil. Stream – Students within Normative Study Period

10. Course Requirement

10.1 Lecture courses

Minimum of 18 units are required from the following list of lecture courses, with at least 6 units to be selected from Group A and the rest from Group B.

Up to two courses (6 units) 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 the Graduate Panel.

Minimum number of units required (a) **18**

10.1.1 Group A: Core Courses

Course code	Course Title	Units	Contact Hours	Minimum Grade
AIE6001	Advanced Math for Artificial Intelligence 人工智能高等數學	3	42	C
Brief course description: This course delves into the critical mathematical foundations essential for developing advanced artificial intelligence (AI) systems. It covers advanced mathematics topics that are crucial for modern AI, such as linear algebra (e.g., matrix operations, singular value decomposition), probability theory (e.g., Markov chains), fundamental for machine learning algorithms, optimization theory (e.g., gradient descent, second order methods), information theory (e.g., entropy and KL divergence). This course is designed for students who already have a basic understanding of mathematics and want to enhance their skills for AI-driven applications.				
AIE6003	Optimization for Machine Learning 機器學習中的優化	3	42	C

Brief course description: This course delves into the theoretical foundations of optimization in machine learning, with a focus on nonlinear programming. Topics include gradient-based methods, adaptive gradient methods, and stochastic optimization. It will also cover emerging topics at the intersection of machine learning and optimization, such as sparse optimization, min-max optimization, bilevel optimization, and black-box optimization. This course is designed for students who are looking to deepen their understanding of advanced optimization techniques and apply them to complex machine learning problems.				
CIE6006	Data Analytics 數據分析	3	42	C
Brief course description: This course introduces techniques, software, applications, and perspectives with massive data. The class will cover, but not be limited to, the following topics: data cleaning and pre-processing, classification, regression, clustering, association and correlation rules, ensemble learning and semi-supervised learning, advanced techniques in distributed file systems such as Google File System, Hadoop Distributed File System, Cloud Store, and map-reduce technology; similarity search techniques for big data such as minhash, locality-sensitive hashing; specialized processing and algorithms for data streams; big data search and query technology; managing advertising and recommendation systems for Web applications. The applications may involve business applications such as online marketing, computational advertising, location-based services, social networks, recommender systems, healthcare services, or other scientific applications.				
CIE6107	Robotics and Intelligent Systems 機器人與智能系統	3	42	C
Brief course description: This course trains students with both theories and practice in the field of robotics and intelligent systems. Topics include mathematic foundations, kinematics, dynamics, control, and hardware such as sensors, actuators and controllers, etc. Hand-on practice will also be included for students to design and control a robotic system to reinforce the basic principles learned in lectures. Other intelligent systems such as intelligent vehicles, intelligent wearable interfaces, etc. will also be selected for introduction.				
CSC6001	Analysis of Algorithms 算法分析	3	42	C
Brief course description: This is an intermediate algorithms course with an emphasis on teaching techniques for the design and analysis of efficient algorithms, emphasizing methods of application. Specifically, the topics include recurrence relation, divide-and-conquer strategies, dynamic programming algorithms, greedy algorithms, theoretical complexity analysis, trees-based algorithms, string processing algorithms, and graph-based algorithms and algorithms.				
CSC6022	Machine Learning 機器學習	3	42	C

Brief course description: This course is to provide a comprehensive introduction to machine learning. You will learn about the most fundamental machine learning techniques and gain hands-on practice implementing them. In this course, you'll learn about not only the theoretical underpinnings of the learning techniques, but also learn about how to quickly and powerfully apply these techniques to new problems. Topics will include Supervised Learning such as Regression, Classification. We will cover Over-fitting, Regularization, Deep Double Descent, Bias Variance Trade-off, Curse of Dimensionality, Validation. Bayesian Classifiers, Nearest Neighbor, Logistic Regression, Decision trees, Support vector machines, MLE, MAP, Bayesian inference, the EM and VAE algorithm. Multilayer Feedforward Networks, Deep Networks. Topics will also include Unsupervised Learning such clustering and PCA. If time permits, topic will also include self-supervised learning and Reinforcement Learning. For each topic, we selectively design the content to meet the requirements for postgraduate students in machine learning.				
CSC6129	Reinforcement Learning 強化學習	3	42	C
Brief course description: This course offers an advanced introduction to reinforcement learning. Bandit learning and Markov decision processes will be covered. The focus will be on the design, analysis, and application of algorithms for complex reinforcement learning problems. The course will cover some recent developments in the field. Students are expected to have experience with optimization, stochastic processes, linear regression, coding for numerical computation, and writing mathematical proofs.				

10.1.2. Group B General Elective Courses

10.1.2.1 Neuroscience and Neural Networks

Course code	Course Title	Units	Contact Hours	Minimum Grade
AIE6002	Large Language Models 大型語言模型	3	42	C
Brief course description: This course offers a comprehensive study of Large Language Models (LLMs). It will explore architecture engineering, training techniques, efficiency enhancements, and prompt engineering. Students will gain insights into the application of LLMs in various domains, tools integration, privacy and bias issues, as well as their limitations and alignment. There will be guest lectures on advanced topics and in-class presentations to stimulate practical understanding. This course is designed for students who are seeking to master the use of LLMs in their field.				
AIE6008	Computational Neuroscience 計算神經科學	3	42	C
Brief course description: This course provides an introduction to the fundamental theories and methodologies of computational neuroscience, focusing on mathematical models of brain information processing and neural networks. Topics include neuron models, network dynamics, mechanisms of learning and memory, and computational theories of perception and decision-making. Students will learn to utilize computational tools to analyze neural data, simulate brain functions, and understand the complex behaviors of neural systems. Through theoretical study and practical projects, the course aims to develop students' research capabilities at the intersection of neuroscience and computer science, advancing their understanding of brain mechanisms.				

CIE6032	Selected Topics in Deep Learning Foundations and Their Applications 深度學習基礎及其應用	3	42	C

Brief course description:
Deep learning solves the central problem in representation learning by introducing representations that are expressed in terms of other, simpler representations. Deep learning enables the computer to build complex concepts out of simpler concepts. This course is developed to study the popular concepts and techniques of deep learning. The contents include probability and information theory basics; machine learning basics; deep feedforward networks and auto-encoder networks; regularization and optimization for deep learning; Convolutional Neural Networks (CNNs); Recurrent Neural Networks (RNNs); Generative Adversarial Networks (GANs); and its applications.

CSC6137	Generative Models 生成模型	3	42	C

Brief course description:
Generative models have become an important topic in machine learning. This course is designed as an advanced version of this topic and will provide a deep introduction to generative models. In this course, students will learn about not only the theoretical underpinnings of the generative model techniques, but also learn about how to quickly and powerfully apply these techniques to new problems. The course topics include GAN, Variational autoencoder, normalizing flows, autoregressive generative models, score-based generative models, and probabilistic diffusion models. Students will also be trained to get hands-on practice implementing them.

10.1.2.2 Theory and Algorithms of AI (TAI)

Course code	Course Title	Units	Contact Hours	Minimum Grade
AIE6004	Learning Theory 學習理論	3	42	C

Brief course description:
This course provides a rigorous theoretical framework for understanding the fundamentals of machine learning. Key topics include Vapnik-Chervonenkis (VC) dimension, probably approximately correct (PAC) learning and statistical learning theory, which will equip students with a deep understanding of the limits and capabilities of different learning algorithms. It will also cover uniform convergence, generalization bounds, and bias-variance trade-offs, with a focus on how these theoretical principles apply to modern algorithms like neural networks and decision trees.

CIE6002	Matrix Analysis 矩陣分析	3	42	C

Brief course description:
Matrix analysis and computations are fundamental tools that are widely used to solve various engineering problems. They are also prerequisites for studying advanced information processing and learning techniques. This course will cover both basic and advanced matrix analysis techniques and relevant signal processing and machine learning applications. It includes matrix operations, eigenvalue decomposition, singular value decomposition, positive semidefinite matrix, linear system, least squares problems, Knonecker product and tensor decomposition.

DDA6001	Advanced Stochastic Processes 高級隨機過程	3	42	C
Brief course description: A stochastic process is a mathematical model for random phenomena which change in time. With examples such as coin tossing, betting, queueing system, branching process, and stochastic networks, this course introduces a basic theory for modelling stochastic processes and their analyses. It intends to help students to perform applied and theoretical studies on stochastic processes. Topics include random walk, counting process, Markov chain, martingale, Poisson process, Brownian motion and Markov process. A basic probability course is a prerequisite for this course.				
DDA6110	Advanced Convex Optimization 高等凸優化	3	42	C
Brief course description: The course covers two main parts: theoretical foundation and practical algorithms for convex optimization, while various types of convex optimization problems are introduced throughout the coverage. The study of the theoretical foundation focuses on the most fundamental properties of convex sets, convex functions and duality theory. A close attention is also paid to the subject of convex cones, generalized inequalities, generalized convex functions, and convex conic programmes. Students learn algorithms and acquire hands-on experience through problem-solving in CVX and MATLAB. Computer projects include solving unconstrained and constrained convex optimization problems via gradient descent, interior-point methods, alternating direction method of multipliers (ADMM) and more.				
DDA6112	Stochastic Optimization 隨機優化	3	42	C
Brief course description: This course will focus on the optimization problems with uncertain parameters, specifically stochastic programming models. The course will start with the modeling aspect of stochastic programmes and their properties. Then we will study the approximation, bounding techniques, and related statistical properties for stochastic optimization. Different decomposition methods will be discussed for large-scale stochastic convex programmes and stochastic mixed-integer programmes. To take this course, knowledge of probability theory and graduate-level optimization is required.				
DDA6210	Algorithmic Game Theory 算法博弈論	3	42	C

Brief course description: Algorithmic game theory is a young research area at the intersection of theoretical computer science, mathematics and economics that deals with the algorithmic aspects of computing optimal strategic behavior. In this course, particular attention will be paid to algorithmic aspects of game-theoretic solution concepts such as Nash equilibrium and to the abstract design of economic mechanisms that negate the Price of Anarchy, where self-interest always results in a degraded system in terms of economic performance. The focus of the course is centered around the following questions: what game-theoretic tools offer scalable algorithmic solutions for Internet applications? How far is the performance of a decentralized system from optimality due to the conflict of interests of its users? How can we make such a system robust with respect to strategic manipulation? To address these fundamental problems at the interface of computer science and game theory, we put emphasis on computational aspects: the appropriate algorithms and computational complexity. The main focus will be on resource allocation mechanisms and auction design, algorithms for equilibria, the complexity of equilibria and fixed points, algorithmic tools in mechanism design, learning in games, and the price of anarchy.

10.1.2.3 Perceptive Science

Course code	Course Title	Units	Contact Hours	Minimum Grade
AIE6006	Embodied Intelligence 具身智能	3	42	C
Brief course description: This course delves into the theory and application of embodied intelligence, examining how intelligent agents perceive, act, and learn both with the physical world and with other intelligent agents. Topics include robotics, sensor fusion, motion control, and human-computer interaction, with an emphasis on understanding the dynamic behaviors of intelligent agents through hands-on experience in various simulation environments. Students will engage in project design and implementation, investigating how agents acquire knowledge and adaptability through interaction with their surroundings. The course aims to develop students' theoretical foundations and practical skills in creating autonomous, adaptive intelligent systems.				
CSC5052	Spoken Language Processing 語音信息處理	3	42	C
Brief course description: This course introduces spoken language processing with an emphasis on deep learning and other state-of-the-art methods for automatic speech recognition, speech synthesis, voice conversion, speaker recognition, affect detection, dialogue management, and applications to digital assistants and spoken language understanding systems. Through project work, students will apply the learned theory in the development of selected spoken language processing systems, evaluation, and optimization of system performance.				
CSC6051	Image Processing and Computer Vision 圖像處理與計算機視覺	3	42	C

Brief course description: A picture is worth a thousand words. How does a computer "see" and "understand" a picture? This course is an introductory graduate-level course to answer such questions. We will first cover principles of image formation, operations to alter images, feature extraction, and other image processing methods to turn images into abstract descriptions. We will then turn to computer vision topics that discuss how to perceive the structure and semantics of the world, including multi-view geometry, structure from motion, and visual localization and recognition. We will also touch upon related topics in machine learning which are widely used in computer vision.				
CSC6052	Natural Language Processing 自然語言處理	3	42	C
Brief course description: This course provides a comprehensive introduction to natural language processing, focusing on fundamental concepts and techniques, as well as different tasks in natural language processing. Topics of this course include but are not limited to: mathematical foundation for natural language processing, information theory, text representation, word segmentation and tokenization, part-of-speech tagging, syntactic and semantic parsing, named entity recognition, relation and event extraction, coreference resolution, sentiment analysis, reading comprehension, key-phrase extraction and generation, summarization, dialogue system, machine translation, etc. Students are expected to learn the latest research progress in this area and understand the necessary techniques as well as the tasks and use appropriate algorithms/models to finish a course project.				
CSC6107	GPU Programming 圖形處理器編程	3	42	C
Brief course description: In this course, students will learn the architectures of GPUs and the OpenCL and CUDA programming languages. In the end, students need to use either OpenCL or CUDA to design a GPU application or system as their final programming project.				

10.1.2.4 Action

Course code	Course Title	Units	Contact Hours	Minimum Grade
AIR5023	Math Fundamentals for Robotics 機器人數學基礎	3	42	C
Brief course description: This course covers selected topics in applied mathematics, taken from the following list: 1. Solution of Linear Equations. 2. Polynomial Interpolation and Approximation. 3. Solution of Nonlinear Equations. 4. Roots of Polynomials, Resultants. 5. Approximation by Orthogonal Functions (includes Fourier series). 6. Integration of Ordinary Differential Equations. 7. Optimization. 8. Calculus of Variations (with applications to Mechanics). 9. Probability and Stochastic Processes (Markov chains). 10. Computational Geometry. 11. Differential Geometry.				
CIE6037	Automatic Control Theory and Linear Control Systems 自動控制理論與線性控制	3	42	C

Brief course description: Automatic control theory is the science dealing with principles and methods of laws in control systems. Nowadays, control science is indispensable in our daily lives to provide convenience for us. The course introduces knowledge beginning from a fundamental mathematical model of typical systems, the methods to characterize well-developed control systems, modern control systems, and the principle of designing proper control algorithms for certain systems. It also deals with the control of dynamic systems in engineered processes and machines. The students enrolled in this course will learn knowledge about block diagrams, modeling principles, root locus rules, frequency response design, Bode plots, controller design, linear systems, and typical examples. The goal of this course is to help postgraduate students to prepare with sufficient knowledge in control science and make them be capable of designing their own controllers based on different requirements.				
DDA6040	Dynamic Programming and Stochastic Control 動態規劃與隨機控制	3	42	C
Brief course description: Dynamic Programming is a fundamental tool widely used to model and solve various engineering problems. This course is developed to study the popular concepts and techniques of dynamic programming. The contents include Principles of Optimality; Dynamic Programming Algorithm; Deterministic Dynamic Programming Problems; Stochastic Dynamic Programming Problems with Perfect and Imperfect Information; Approximate Dynamic Programming and Infinite Horizon Problems.				

10.1.2.5 Applications

Course code	Course Title	Units	Contact Hours	Minimum Grade
AIE6005	AI for Science 人工智能驅動的科學研究	3	42	C
Brief course description: This course explores the cutting-edge applications of artificial intelligence (AI) in scientific research, covering areas such as physics, chemistry, and biology. Students will learn foundational AI theories and their implementation, integrating tools like AlphaFold and ChatGPT. The curriculum balances theory with practical problem-solving, emphasizing AI's role in fields like drug design, material science, and environmental science. Students will also engage in projects focused on model interpretability, ethics, and fairness in AI. Assessments include practical assignments and project presentations, utilizing resources such as key textbooks and open-source tools. This course prepares students for the practical application of AI in scientific research and future careers.				
BME6007	Applied Artificial Intelligence in Healthcare 醫療保健中的應用人工智能	3	42	C
Brief course description: This course will provide students with basics of AI and its application in healthcare such as diagnosis, medical image analysis, data analysis and data extraction, natural language processing and decision support systems. Students will obtain practical experience in applying machine learning to concrete problems in medicine. The course will also address ethical issues and data protection issues, regulations and entrepreneurship aspects of AI in healthcare.				
CIE6040	Machine Intelligence and Applications 機器智能及應用	3	42	C

Brief course description: This course provides a comprehensive introduction of the fundamental problems and methodologies of machine intelligence with a strong emphasis on applications. This course focuses on multi-agent machine intelligence and shows how to solve real-world problems by combining machine learning techniques with game theory and microeconomics. The detailed applications include ad bidding, crowdsourcing, AlphaGo, recommender systems, image recognition, smart stock picking and healthcare.				
DDA6113	AI Security and Privacy 人工智慧的安全與隱私	3	42	C
Brief course description: This course will introduce one special topic of artificial intelligence (AI), i.e., security and privacy. It provides you the opportunity to know the general concepts of AI security and privacy, to understand the possible threats to mainstream AI systems (e.g., deep learning systems), as well as to learn the skills to explore the vulnerabilities and to design a secure AI system. It covers adversarial examples, backdoor learning, federated learning, differential privacy, homomorphic encryption, membership inference, and model extraction, etc.				
MBI6006	Machine Learning for Biomedical Research 生物醫學研究中的機器學習	3	42	C
Brief course description: This course provides general concepts of machine learning, including clustering, parametric and nonparametric methods, decision trees, neural networks, hidden Markov models, Bayesian estimation, and reinforcement learning. This course provides students with the opportunity to learn skills and contents, to practice and engage in scalable machine learning methods on massive data, and to study methods to train/learn/develop computational models from varieties of data.				
PUB5620	AI and Governance 人工智能與治理	3	42	C
Brief course description: This course will provide comprehensive knowledge and the real-world practices of artificial intelligence (AI) and governance from the following two aspects. The first aspect is AI for governance. It will introduce how to use data science and AI to inform policy-making: from identifying policy priorities by modelling complex systems and scenarios, to evaluating hard-to-measure policy outcomes. It will also introduce how to use data science and AI to improve the design and provision of public services: from allocating resources in the fairest and most transparent way, to designing personalised public services that are tailored to people's individual needs and situations. The second aspect is governance of AI. It will enhance students' understanding of the ethical and societal implications of data science and AI. It will also educate students on how to develop well-crafted laws and sensible regulations for AI and data science.				

10.2 Thesis research courses

Each student must register for Thesis Research courses each term. The minimum requirement is listed below.

Minimum number of units per term	(b)	**6**

Course code	**Course Title**	**Units**	**Contact Hours**	**Minimum Grade**

AIE8201	Thesis Research I 論文研究 (一)	6	84	C

Brief course description:
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.

10.3 Other courses

All students in this Programme are required to take the following courses:

Course code	Course Title	Units	Contact Hours	Minimum Grade
AIE8301	Academic Seminars 學術研討會	0	-	Pass
Brief course description: There will be a variety of research seminars given by faculty members and invited guests in the area of artificial intelligence for graduate students.				
GGE5001G	Academic Writing and Presentation 學術論文寫作和演講	2	28	Pass
Brief course description: This course is specifically designed for research postgraduate students. It aims to develop students' academic English writing skills and communication competence in international academic context. It will provide hands-on skills or workshops in writing an academic research thesis and paper, and help students prepare and edit it. It will also provide workshops to improve the communication and public speaking skills.. Upon completion of this course, students are expected to master professional skills of writing academic proposals, thesis and scientific papers, and presenting research results.				

Minimum number of units required, if applicable (c) **2**

10.4 Total unit requirement

Total number of units required for graduation within normative study period for:

M.Phil. students (i.e. (a) + (b) x 4 terms + (c)) (d) **44**

10.5 Course and Unit Exemption

☑ Please tick if the correlated items posted on the official website of the Graduate School have been checked. (https://gs.cuhk.edu.cn/page/52).

Students may be granted course and/or unit exemptions if they have taken similar or equivalent postgraduate courses with satisfactory performance ("B" grade or above). Supporting documents such as academic transcripts, course syllabus must be provided. Exemption for a maximum of 6 units of lecture courses may be granted. The application should be approved by the Dean of the Graduate School after the endorsement of the Programme Director/Coordinator and the Graduate Panel Chair.

11. Additional Term Assessment Requirement Set by Programme (*Applicable for programmes with higher grade requirement, etc.)*

N/A

M.Phil. Stream – Students Exceeding Normative Study Period

12. Course Requirements

12.1 Thesis research courses

Each student must register for Thesis Research courses every term. The minimum requirement is listed below.

Minimum number of units per term (e) **6**

Course code	Course Title	Units	Contact Hours	Minimum Grade
AIE8201	Thesis Research I 論文研究 (一)	6	84	C
Brief course description: 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.				

12.2 Other courses (N/A)

Course code	Course Title	Units	Contact Hours	Minimum Grade
Brief course description:				

Minimum number of units required, if applicable. (f) **0**

13. Thesis Defence

An M.Phil. 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 staff members as determined by the Graduate Panel. The external examiner and the CUHK examiner are not required to attend the oral defence of an M.Phil. candidate.

Ph.D. Stream

17. Course Requirement

Ph.D. candidates have to complete a minimum number of units of Lecture courses and Thesis research courses (on a per term basis), during the pre-candidacy and post-candidacy stage. However, since the study period of the 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.

<u>*Example:*</u>

a. *A student with a research master's degree who pursues Ph.D. study will have completed the following within the normative study period:*

Pre-candidacy stage (2 years):	*Lecture courses*	*27 units*
	Thesis research courses	*6 units x 4 terms = 24*
	Academic Writing and Presentation	*2 units*
Post-candidacy stage (2 years):	*Thesis research courses*	*12 units x 4 terms = 48 units*

The student will therefore complete 101 units for graduation.

b. *A student without a research master's degree who pursues Ph.D. study will have completed the following within the normative study period:*

Pre-candidacy stage (3 years):	*Lecture courses*	*27 units*
	Thesis research courses	*6 units x 6 terms = 36*
	Academic Writing and Presentation	*2 units*
Post-candidacy stage (2 years):	*Thesis research courses*	*12 units x 4 terms = 48 units*

The student will therefore complete 113 units for graduation.

Ph.D. Stream – Pre-Candidacy

18. Candidacy Requirement

18.1 Course Requirements

18.1.1 Lecture courses

A student will have to complete at least 27 units of lecture courses as part of the candidacy requirement, with at least 9 units to be selected from Group A and the rest from Group B.

Up to two courses (6 units) 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 the Graduate Panel.

The course list is the same as that in Section 10.1.

Minimum number of units required **27**

18.1.2 Thesis research courses

Each student must register for Thesis Research courses every term. The minimum required is listed below:

Minimum number of units per term **6**

Course code	Course Title	Units	Contact Hours	Minimum Grade
AIE8201	Thesis Research I 論文研究 (一)	6	84	C
Brief course description: 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.				

18.1.3 Other courses

All students in this Programme are required to take the following courses:

Course code	Course Title	Units	Contact Hours	Minimum Grade
AIE8301	Academic Seminars 學術研討會	0	-	Pass
Brief course description: There will be a variety of research seminars given by faculty members and invited guests in the area of artificial intelligence for graduate students.				
GGE5001G	Academic Writing and Presentation 學術論文寫作和演講	2	28	Pass
Brief course description: This course is specifically designed for research postgraduate students. It aims to develop students' academic English writing skills and communication competence in international academic context. It will provide hands-on skills or workshops in writing an academic research thesis and paper, and help students prepare and edit it. It will also provide workshops to improve the communication and public speaking skills. Upon completion of this course, students are expected to master professional skills of writing academic proposals, thesis and scientific papers, and presenting research results.				

Minimum number of units required, if applicable	**2**

18.1.4 Course and Unit Exemption

☑ Please tick if the correlated items posted on the official website of the Graduate School have been checked. (https://gs.cuhk.edu.cn/page/52).

Students may be granted course and/or unit exemptions if they have taken similar or equivalent postgraduate courses with satisfactory performance ("B" grade or above). Supporting documents such as academic transcripts, course syllabus must be provided. Exemption for a maximum of 9 units of lecture courses may be granted. The application should be approved by the Dean of the Graduate School after the endorsement of the Programme Director/Coordinator and the Graduate Panel Chair.

18.2 Candidacy Examination

18.2.1 Format

Each 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; and Part II - Thesis proposal and oral defence (see Section 18.3). A student must obtain a pass grade in both Parts to pass the Candidacy Examination.

18.2.2 How often will the written examination be arranged? 1 times per year

18.2.3 How many times can a student attempt? 2 times

18.2.4 Please specify if certain papers can be replaced by passing relevant courses (may or may not be within the normal course requirement) at specified grades, if applicable. N/A

18.3 Thesis proposal and oral defense

A thesis proposal and oral defense are required for each student. This serves as Part II of the Candidacy Examination.

19. Additional Term Assessment Requirement set by Programme (*Applicable for programmes with higher grade requirement, etc.)*

N/A

Ph.D. Stream - Post-candidacy

20. Course Requirements

20.1 Lecture courses

There is no compulsory lecture course for Ph.D. students at their post-candidacy stage.

20.2 Thesis Research courses

Each student must register for Thesis Research courses every term. The minimum required is listed below.

Minimum number of units per term: **12**

Course code	Course Title	Units	Contact Hours	Minimum Grade
AIE8202	Thesis Research II 論文研究 (二)	12	168	C
Brief course description: 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.				

20.3 Other courses

All students in this Programme are required to take the following course:

Course code	Course Title	Units	Contact Hours	Minimum Grade
AIE8301	Academic Seminars 學術研討會	0	-	Pass
Brief course description: There will be a variety of research seminars given by faculty members and invited guests in the area of artificial intelligence for graduate students.				

Minimum number of units required, if applicable: **0**

Ph.D. Stream (Post-candidacy) – Students Exceeding Normative Study Period

21. Course Requirements

21.1 Thesis research courses

Each student must register for Thesis Research courses every term. The minimum required is listed below.

Minimum number of units per term **12**

Course code	Course Title	Units	Contact Hours	Minimum Grade
AIE8202	Thesis Research II 論文研究 (二)	12	168	C

Brief course description:
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.

21.2 Other courses

Course code	Course Title	Units	Contact Hours	Minimum Grade
AIE8301	Academic Seminars 學術研討會	0	-	Pass

Brief course description:
There will be a variety of research seminars given by faculty members and invited guests in the area of artificial intelligence for graduate students.

Minimum number of units required, if applicable **0**

21.3 Other Learning Activities

N/A