智能系統研究所碩士班

114學年度

修業年限	以1至4年為限
應修學分數	1. 24 學分，含本所核心課程至少 6 學分及本所專業選修課程至少 12 學分。 2. 修業期間，論文研討應加總通過 2 學期，該課程可用本學院產學研究課程(業師課程或企業實習)申請免修，同意免修之產學研究課程不計入應修課程 24 學分中。
核心課程	若為「本所開設課程」或「本所專任教師開設課程」，應優先修習方可認列為核心課程學分。若為第二次重修則不在此限。 甲組：主修人工智慧、資料科學、運算與應用 1. 人工智慧（3學分） 2. 機器學習（3學分） 3. 深度學習（3學分） 4. 電腦視覺（3學分） 5. 強化學習原理(3 學分） 6. 最佳化理論與應用（3 學分） 7. 自然語言處理（3學分） 8. 數位語音訊號處理（3學分） 9. 網路資訊檢索（3學分） 乙組：主修資安與資訊工程 1. 人工智慧（3學分） 2. 機器學習（3學分） 3. 網路安全（3學分） 4. 軟體測試（3學分） 5. 網路程式設計（3學分） 6. 演算法（3學分） 7. 作業系統（3學分） 8. 程式安全（3學分） 9. 資安實務與規範（3學分） 10. 可信任人工智慧（3學分） 丙組：主修寬頻通訊與物聯網 1. 人工智慧（3學分） 2. 機器學習（3學分） 3. 無線通訊（3學分） 4. 數位通訊（3學分） 5. 隨機過程/隨機程序（3學分） 6. 排隊理論（3學分） 7. 計算機網路(3學分） 8. 數位訊號處理（3學分） 9. 演算法（3學分） 10. 檢測與估計/檢測與估計理論（最多採計 3 學分） 11. 深度學習（3學分） 12. 最佳化理論與應用(3學分） 13. 物理數學（3學分） 14. 高等電磁學(一)（3學分） 15. 天線理論（3學分）

	16.電波傳播與散射（3學分） 17.微波工程(一)（3學分） 18.電腦輔助電路設計與分析（3學分） 19.數值半導體元件模式（3學分） 丁組：主修人工智慧與資通訊網路 1. 甲組、乙組及丙組其中一組之核心課程，入學時需繳交「選讀修課組別申請表」至本所留存備查。
專業選修課程	一、本所專任教師及國際大師所開設之課程。 二、各組別合聘教師所開研究所課程。 三、本校產學創新研究學院、電機學院、資訊學院、工學院、理學院與智慧科學暨綠能學院之人工智慧、通訊及資訊安全相關專業課程，且經指導教授與所長同意，方可認列專業選修學分。 四、其他相關專業研究所課程，但須經指導教授同意~~推薦~~及本所課程委員會同意。
備註	一、學術研究倫理教育課程採網路教學方式實施，為必修教育課程，但不計入專業課程學分。 (1)學生於修業期間(建議入學後第一學期內)，至「臺灣學術倫理教育資源中心」平台修習本課程，並應通過課程總測驗成績達及格標準。 (2)總測驗成績未達及格標準之學生，不得申請學位考試。 二、核心課程應先滿足6學分規定，超過之核心課程學分可列計專業選修學分。 三、同一門課程不能重複認列核心課程及專業選修課程學分。 四、未盡事宜以本所通過之修業規章辦理。

Master's Degree of the Institute of Artificial Intelligence Innovation

Academic Year 2025

Minimum and Maximum Term of Study	1 ~ 4year
Minimum Credits	● 24 credits: Including 6 core course and 12 professional course credits. ● Thesis discussion: 2 semesters are required, 0 credit for each semester. ● Students may apply for a waiver of the thesis discussion requirement by completing industry-academia research courses offered by the college (including courses taught by industry professionals or corporate internships). Courses approved for such a waiver shall not be counted toward the required 24 academic credits.
Core Courses	● Curriculum and Regulations: The following core courses, if offered by the institute or taught by full-time faculty members of the institute, must be taken as a priority in order to be counted as core course credits. This requirement does not apply to second retakes. ● Group I: AI, Data Science, Data Processing and Application 1. Artificial Intelligence (3 credits) 2. Machine Learning (3 credits) 3. Deep Learning (3 credits) 4. Computer Vision (3 credits) 5. Reinforcement Learning (3 credits) 6. Optimization Theory and Application (3 credits) 7. Natural Language Processing (3 credits) 8. Digital Speech Processing (3 credits) 9. Web Information Retrieval (3 credits) ● Group II: Information Security and Information Engineering 1. Artificial Intelligence (3 credits) 2. Machine Learning (3 credits) 3. Network Security (3 credits) 4. Software Testing (3 credits) 5. Network Programming (3 credits) 6. Algorithm (3 credits) 7. Operating System (3 credits) 8. Secure Programming (3 credits) 9. Information Security Practice and Regulation (3 credits) 10. Trustworthy AI (3 credits) ● Group III: Broadband Communication and IoT 1. Artificial Intelligence (3 credits) 2. Machine Learning (3 credits) 3. Wireless Communications (3 credits) 4. Digital Communication (3 credits) 5. Stochastic Processes (3 credits) 6. Queuing Theory (3 credits) 7. Computer Networks (3 credits) 8. Digital Signal Processing (3 credits) 9. Algorithm (3 credits) 10. Detection and Estimation/ Detection and Estimation Theory (at most 3 credits) 11. Deep Learning (3 credits) 12. Optimization Theory and Application (3 credits) 13. Mathematical Methods for Physicists (3 credits) 14. Advanced Electromagnetics (I) (3 credits)

	15. Antenna Theory (3 credits) 16. Wave Propagation and Scattering (3 credits) 17. Microwave Engineering(I) (3 credits) 18. Computer - Aided Circuit Design and Analysis (3 credits) 19. Numerical Semiconductor Device Modeling (3 credits) ● Group IV: AI and ICT Network The core courses from one of group I to III. You must submit the "Application Form for Elective Course Groups" to our institute.
Professional Courses	● Courses are taught by full-time faculty members or International Grandmaster Course Series in our institute. ● Master Courses taught by joint-appointment faculty members of your belonging group in our institute. ● The professional courses of artificial intelligence、communications and information security in Industry Academia Innovation School、College of Electrical and Computer Engineering、College of Computer Science、College of Engineering、College of Science and College of Artificial Intelligence, and must be approved by your thesis advisor and the director of our institute. ● The other professional master courses must be approved by your thesis advisor and the curriculum committee in our institute.
Notes	I. Students should take the “Research Ethics Course” on the “Taiwan Academic Ethics Education Resource Center” platform before the end of the first semester after enrollment and pass the required approval standard for the final test. Students who fail to pass the final test cannot apply for degree exam. II. Core course credits can be counted as professional courses only if the 6 main course credits are satisfied. III. The course cannot be used to double-recognize credits for core courses and professional courses. IV. Please refer to the “Academic Regulations for Master's Program in the Institute of Artificial Intelligence Innovation” for the details.

智能系統研究所博士班

114 學年度

修業年限	修業期限 2 年至 7 年為限，若轉為在職生得增加修業年限 2 年。
應修學分數	18 學分。
逕博應修學分數	逕博生至少應修畢 24 學分。
應修(應選)課程及符合畢業資格之修課相關規定	一、入學後修習本所甲、乙、丙其中一組(請參照 114 學年度碩士班修課規定)核心課程至少 6 學分及本所專業選修課程至少 6 學分；修業期間，論文研討應加總通過 2 學期，該課程可用本學院產學研究課程(業師課程或企業實習)申請免修，同意免修之產學研究課程不計入應修課程 18 學分中(逕博生 24 學分)。 二、修習並通過本校語言/寫作中心開設之研究生英文課程兩門或(本校)博士班英語能力考核。英文修習可使用第三方公正機構之英文檢定成績來抵免，抵免標準由本所另訂定之。 三、學術研究倫理教育課程為必修教育課程，採網路教學方式，課程總測驗成績應達及格標準，但不計入應修學分數。
備註	一、核心課程應先滿足 6 學分規定，超過之核心課程學分可列計專業選修學分。 二、同一門課程不能重複認列核心課程及專業選修課程學分。 三、未盡事宜以本所通過之修業規章辦理。

Doctor's Degree of the Institute of Artificial Intelligence Innovation

Academic Year 2025

Minimum and Maximum Term of Study	Two to Seven Years.
Minimum Credits	● 18 credits: Including 6 core courses credits of your belonging group, and 6 professional courses credits. (Please refer to Master's Degree of the Institute of Artificial Intelligence Innovation in Academic Year 2025 to find the courses and regulations) ● Thesis discussion : 2 semesters are required, 0 credit for each semester.
Minimum Credits for Direct admitted Ph.D. students	Direct admitted Ph.D. students: 24 Credits.
Curriculum and Regulations	I. Students may apply for a waiver of the thesis discussion requirement by completing industry-academia research courses offered by the college (including courses taught by industry professionals or corporate internships). Courses approved for such a waiver shall not be counted toward the required academic credits. II. Students must select and pass two Graduate English courses opened by NYCU Language Teaching and Research Center, or pass NYCU Measures for PhD Students' English Competence. English courses can be waived by English Proficiency Test which is hold by third party inspection organization. The Accreditation Measures will be regulated by our Institute. III. Students should take the "Research Ethics Course" on the "Taiwan Academic Ethics Education Resource Center" platform before the end of the first semester after enrollment and pass the required approval standard for the final test. Students who fail to pass the final test cannot apply for degree exam. The courses are not included in Minimum Credits.
Notes	I. Group I: AI, Data Science, Data Processing and Application. Group II: Information Security and Information Engineering. Group III: Broadband Communication and IoT. II. Core course credits can be counted as electives only if the 6 main course credits are satisfied. III. The course cannot be used to double-recognize credits for core courses and professional courses. IV. Please refer to the "Academic Regulations for Ph.D.'s Program in the Institute of Artificial Intelligence Innovation" for the details. ◦