元智大學「人工智慧工業應用」深耕跨域學程 科目規劃表

Yuan Ze University

"Artificial Intelligence in Industrial Applications" Advanced Cross-Domain Program

Course Planning Table

（115 學年度申請適用）

(For students applied in Academic Year 2026)

115.8.25 一一五學年度第一次教務會議通過

Passed by the 1st Academic Affairs Meeting, Academic Year 2026, on August 25, 2026

一、教學目標 Teaching Objectives：

本學程主要提供**電機通訊學院、資訊學院及工程學院**之大學部學生修習，旨在培養學生具備人工智慧、資料分析及智慧製造之基礎知識與跨領域應用能力。課程由基礎素養、專業領域應用及終端實作三個階段組成，引導學生運用機器學習、深度學習、資料探勘、物聯網及生成式人工智慧等技術，分析並解決生產製造、設備監控、品質管理及產業決策等實務問題。學生最終將透過終端實作課程，整合人工智慧與工業領域知識，完成符合產業需求之應用成果，培養系統整合、問題分析、團隊協作及創新實踐能力。

This program is designed primarily for undergraduate students in **the College of Electrical and Communication Engineering, the College of Informatics, and the College of Engineering**. It aims to develop foundational knowledge and interdisciplinary application skills in artificial intelligence, data analytics, and intelligent manufacturing. The curriculum consists of three stages: foundational competency, professional domain applications, and terminal practice. Students will learn to apply machine learning, deep learning, data mining, the Internet of Things, and generative AI to practical problems in manufacturing, equipment monitoring, quality management, and industrial decision-making. Through the Terminal Practice course, students will integrate artificial intelligence with industrial domain knowledge to develop applications that address real-world industry needs while strengthening their abilities in system integration, problem analysis, teamwork, and innovative practice.

二、課程設計 Curriculum Design：

(一) 基礎素養必修課程

Required Courses — Foundational Competency

須修習所屬學系（組、班）開設之**電機通訊學院、資訊學院或工程學院**各院必修「AI程式設計」共4學分，實際課程名稱請詳見「各系必選修科目表」。

Students are required to complete the 4-credit “Fundamentals of AI Programming” course required by their respective college— **the College of Electrical and Communication Engineering, the**

College of Informatics, and the College of Engineering. The actual course title should be referred to the "Required and Elective Course List of Each Department."

(二) 專業領域選修課程 (以下12門課擇2門修習)

Elective Courses — Professional Domain: Choose two of the following twelve courses

課群名稱 Course Group Name	課號 Course ID	課程名稱 Course Name	學分 Credit(s)	學制 Academic Level	開課系所 Offering Unit
統計 Statistics	AI005	統計學暨實習 Statistics with Recitation	3	大學部 Undergraduate	AI聯盟 TAICA
	CS226/ IN207	機率與統計 Probability and Statistics	3	大學部 Undergraduate	資訊工程學系/資訊學院英語學士班 Department of Computer Science and Engineering / International Bachelor Program in Informatics
	IM231	統計學(一) Statistics(Ⅰ)	3	大學部 Undergraduate	資訊管理學系 Department of Information Management
機器學習 Machine Learning	ME384	人工智慧概論 Introduction to Artificial Intelligence	3	大學部 Undergraduate	機械工程學系 Department of Mechanical Engineering
	IM244	生成式人工智慧之商業應用 Business Applications of Generative AI	3	大學部 Undergraduate	資訊管理學系 Department of Information Management
	IM341/IN316	資料探勘 Data Mining	3	大學部 Undergraduate	資訊管理學系/資訊學院英語學士班 Department of Information Management/ International Bachelor Program in Informatics
	AI004	人工智慧導論 Introduction to Artificial Intelligence	3	大學部 Undergraduate	AI聯盟 TAICA

課群名稱 Course Group Name	課號 Course ID	課程名稱 Course Name	學分 Credit(s)	學制 Academic Level	開課系所 Offering Unit
	AI006	生成式人工智慧與機器學習導論 Introduction to Generative Artificial Intelligence and Machine Learning	3	大學部 Undergraduate	AI聯盟 TAICA
智慧製造 Smart Manufacturing	EG201	智慧生產概論 Introduction to Intelligent Production	3	大學部 Undergraduate	工程學院 College of Engineering
	IE125	物聯網與人工智慧應用 Internet of Things and Artificial Intelligence Applications	3	大學部 Undergraduate	工業工程與管理學系 Department of Industrial Engineering and Management
	CS349	智慧物聯網 Artificial Intelligence of Things	3	大學部 Undergraduate	資訊工程學系 Department of Computer Science and Engineering
	EEB340	智慧物聯網 AIoT Fundamentals	3	大學部 Undergraduate	電機工程學系 Department of Electrical Engineering

(三) 終端實作必修課程 (以下4門課擇1門修習)

Required Courses — Terminal Practice: Choose one of the following four courses

課號 Course ID	課程名稱 Course Name	學分 Credit(s)	學制 Academic Level	開課系所 Offering Unit	備註 Remarks
IE428	資料分析 Data Analysis	3	大學部 Undergraduate	工業工程與管理學系 Department of Industrial Engineering and Management	
CS406	資料探勘實務 Data Mining Practice	3	大學部 Undergraduate	資訊工程學系 Department of Computer Science and Engineering	

課號 Course ID	課程名稱 Course Name	學分 Credit(s)	學制 Academic Level	開課系所 Offering Unit	備註 Remarks
CS429/ IN317	智慧製造 Smart Manufacturing	3	大學部 Undergraduate	資訊工程學系/資訊學院英語學士班 Department of Computer Science and Engineering/ International Bachelor Program in Informatics	
AI510	智慧製造執行系統 Intelligent Manufacturing Execution Systems	3	碩士班 Master Program	AI聯盟 TAICA	

三、學程證書授予標準 Certificate Award Criteria：

1、 在第二階段之專業領域選修課程中，學生須至少修習一門非所屬學系（組、班）開設之科目。 In the second-stage Professional Domain Electives, students must complete at least one course offered outside their own department, program, or class.

2、 修讀本學程之學生須修畢至少12學分，包含基礎素養必修課程2門、專業領域選修課程2門、終端實作必修課程1門，即授予學程證書。 Students enrolled in this program must complete at least 12 credits, including two required courses in Foundational Competency, two elective courses in the Professional Domain, and one required course in Terminal Practice, to be awarded the program certificate.

3、 為避免影響畢業時程，不建議學生於大四下學期始修習終端實作必修課程。 Students are advised not to enroll in a Terminal Practice course for the first time during the second semester of their senior year, in order to avoid conflicts with their graduation schedule.

四、領域別 Fields of Study：人工智慧 Artificial Intelligence

五、學程主責教師 Program Director：工管系/孫天龍教授 Industrial Engineering/Prof. Tian-Long Sun

六、負責規劃單位 Responsible Planning Unit：人工智慧學分學程委員會Artificial Intelligence Credit Program Committee