國立勤益科技大學日間部四年制 115 學年度人工智慧應用工程系學分計畫表
National Chin-Yi University of Technology Curriculum Planning of 2026 Four-Year Degree in Department of Artificial Intelligence and Computer Engineering

113.09.06.系課程會議審議通過
113.11.01.系課程會議審議通過
113.11.20.院課程委員會議審議通過
113.12.5.校課程委員會議及 113.12.24.教務會議審議通過
114.04.14 系課程會議審議通過
114.05.02 系課程會議審議通過
114.09.16 系課程委員會審議通過及及 114.11.13 院課程會議審議通過
114.12.4 校課程委員會議及 114.12.23 臨時教務會議審議通過
115.03.30 系課程委員會通過
115.5.13 院課程會議審議通過
115.6.4 校課程委員會議及 115.6.18 教務會議審議通過

科目	Courses	上學期 First Semester			下學期 Second Semester		
		學分 Credits	正課 Lecture	實習 Internship	學分 Credits	正課 Lecture	實習 Internship
共同必修科目(28 學分) General Required Courses (28 credits)							
第一學年 First Year							
國文(一)	Chinese (I)	2	2	0			
大一英文(一)	Freshman English (I)	2	2	0			
英文聽講(一)	Listening and Speaking (I)	1	1	0			
歷史與文化(一)	History and Culture (I)	2	2	0			
體育(一)	Physical Education (I)	0	2	0			
音樂鑑賞	Music Appreciation	1	1	0			
國文(二)	Chinese (II)				2	2	0
大一英文(二)	Freshman English (II)				2	2	0
英文聽講(二)	Listening and Speaking (II)				1	1	0
歷史與文化(二)	History and Culture (II)				2	2	0
藝術鑑賞	Art Appreciation				1	1	0
體育(二)	Physical Education (II)				0	2	0
第二學年 Second Year							
憲法與民主	Constitution and Democracy	2	2	0			
博雅通識課程	Liberal Education	2	2	0			
體育(三)	Physical Education (III)	0	2	0			
博雅通識課程	Liberal Education				2	2	0
博雅通識課程	Liberal Education				2	2	0
體育(四)	Physical Education (IV)				0	2	0
第三學年 Third Year							
博雅通識課程	Liberal Education	2	2	0			
博雅通識課程	Liberal Education				2	2	0
第四學年 Fourth Year（無必修課程 No General Required Courses）							
專業必修科目 (40 學分) Department Required Courses (40 credits)							
第一學年 First Year							
微積分(一)	Calculus (I)	3	3	0			
△Python 程式設計實務	△Python Programming	3	3	0			
微處理機概論	Introduction to Microprocessors	3	3	0			
微積分(二)	Calculus (II)				3	3	0
△物件導向程式設計	△Object-oriented Programming				3	3	0
AI 人工智慧概論	AI Introduction to Artificial Intelligence				3	3	0
第二學年 Second Year							
AI 機器學習概論	AI Introduction to Machine Learning	3	3	0			
線性代數	Linear Algebra	3	3	0			
資料結構	Data Structures	3	3	0			
作業系統	Operating Systems				3	3	0
離散數學	Discrete Mathematics				3	3	0
AI 深度學習理論與應用	AI Deep Learning Theory and Applications				3	3	0
第三學年 Third Year							
●實務專題(I)	●Project Study (I)	2	0	6			
●實務專題(II)	●Project Study (II)				2	0	6
第四學年 Fourth Year（無排定 No Department Required Courses）							

科目	Courses	上學期 First Semester			下學期 Second Semester		
		學分 Credits	正課 Lecture	實習 Internship	學分 Credits	正課 Lecture	實習 Internship
共同選修科目 General Electives Courses							
第一學年 First Year							
外語選修課程	Foreign language elective courses	2	2	0	2	2	0
外語菁英課程	Foreign Language Elite Courses	6	6	0	6	6	0
全民國防教育軍事訓練(一)	All-Out Defense Education Military Training（I）	1	2	0			
全民國防教育軍事訓練(二)	All-Out Defense Education Military Training（II）				1	2	0
第二學年 Second Year							
外語選修課程	Foreign language elective courses	2	2	0	2	2	0
外語菁英課程	Foreign Language Elite Courses	6	6	0	6	6	0
全民國防教育軍事訓練(三)	All-Out Defense Education Military Training (III)	1	2	0			
全民國防教育軍事訓練(四)	All-Out Defense Education Military Training (IV)				1	2	0
體育選修	Physical Elective Course	1	2	0	1	2	0
第三學年 Third Year							
外語選修課程	Foreign language elective courses	2	2	0	2	2	0
外語菁英課程	Foreign Language Elite Courses	6	6	0	6	6	0
體育選修	Physical Elective Course	1	2	0	1	2	0
全民國防教育軍事訓練(五)	All-Out Defense Education Military Training (V)	1	2	0			
第四學年 Fourth Year							
外語選修課程	Foreign language elective courses	2	2	0	2	2	0
外語菁英課程	Foreign Language Elite Courses	6	6	0	6	6	0
體育選修	Physical Elective Course	1	2	0	1	2	0
專業選修科目 Department Elective Courses							
第一學年 First Year							
△C 語言程式設計	△C Language Programming	3	3	0			
電腦軟體應用與設計	Computer Software Application and Design	3	3	0			
△互動藝術程式設計	△Creative Coding				3	3	0
計算機網路概論	Introduction to Computer Networks				3	3	0
第二學年 Second Year							
●生成式人工智慧實務	●Generative Artificial Intelligence Practice	3	3	0			
●數位影像處理導論	●Introduction to Digital Image Processing	3	3	0			
●資料擷取與感測器實務	●Data Acquisition and Sensor Practice	3	3	0			
空拍攝影應用	Applications of Aerial Photography	3	3	0			
元宇宙藝術導論	Introduction to Metaverse Art	3	3	0			
●Linux 系統實務	●Linux System Practice	3	3	0			
系統分析與設計	System Analysis and Design	3	3	0			
機率與統計	Probability and Statistics	3	3	0			
AIAI 應用數學概論	AIIntroduction to AI Applied Mathematics	3	3	0			
多媒體概論	Introduction to Multimedia	3	3	0			
●嵌入式系統與感測器應用概論	●Introduction to Embedded System and Sensor Application	3	3	0			
計算機組織	Computer Organization	3	3	0			
●△資料庫應用	●△Database Applications				3	3	0
●電腦視覺概論	●Introduction to Computer Vision				3	3	0
●大數據與資料探勘實務	●Big Data and Data Mining Practice				3	3	0
3D 動畫實務	3D Animation Practice				3	3	0
元宇宙色彩實務	Metaverse Color Practice				3	3	0
AI深度學習程式實務	AIDeep Learning Program Practice				3	3	0
△網頁設計與網站管理	△Web Design and Website Management				3	3	0
系統架構與軟體工程實務	System Architecture and Software Engineering Practice				3	3	0
演算法	Algorithms				3	3	0
生產與作業管理實務	Production and Operation Management Practice				3	3	0
AIPython 機器學習應用	AIMachine Learning Applications Using Python				3	3	0
AI數據分析與機器學習實務	AIData Analysis and Machine Learning Practice				3	3	0
資訊安全導論	Introduction to Information Security				3	3	0
第三學年 Third Year							
雲端數據分析與視覺化實務	Cloud Data Analysis and Visualization Practice	3	3	0			
特徵工程實務	Feature Engineering Practice	3	3	0			
●OpenCV 影像處理實務	●OpenCV Image Processing Practice	3	3	0			
△遊戲程式設計實務	△Game Programming Practice	3	3	0			
體感互動裝置	Somatosensory Interactive Device	3	3	0			
●邊緣計算實務	●Edge Computing Practice	3	3	0			

AIAI 影像辨識實務	AIAI Image Recognition Practice	3	3	0			
智慧機械概論	Introduction to Intelligent Machinery	3	3	0			
●智慧機械 APP 設計實務	●Smart Machinery APP Design Practice	3	3	0			
網路安全	Internet Security	3	3	0			
機率模型	Probability Model	3	3	0			
行動裝置應用設計實務	Mobile Device Application Design Practice	3	3	0			
●物聯網控制實務	●Internet of Things Control Practice	3	3	0			
網路協定分析實務	Network Protocol Analysis Practice	3	3	0			
●實驗設計實務	●Experimental Design Practice	3	3	0			
●智慧化工程實務	●Smart Engineering Practice				3	3	0
AI智慧自動光學檢測實務	AI Smart Automated Optical Inspection Practices				3	3	0
軟體工程實務	Software Engineering Practice				3	3	0
生成模型與資料增強實務	Generative Models and Data Augmentation Practice				3	3	0
●容器化部署	●Containerized Deployment Practice				3	3	0
擴增實境原理與應用	Principles and Applications of Augmented Reality				3	3	0
AI智慧生活影像應用實務	AIAI-based Life Image Recognition Applications Practice				3	3	0
●工業物聯網數據擷取與應用實務	●Data Acquisition and Application Practice Using Industrial Internet of Things				3	3	0
職場倫理	Workplace Ethics				3	3	0
AIAI 繪圖實務	AIAI Drawing Practice				3	3	0
3D 列印工程實務	3D Printing Engineering Practice				3	3	0
AIAI 自然語言處理實務	AIAI Natural Language Processing				3	3	0
●校外實習(暑期)	●Extracurricular Intern (Summer Vacation)				3	0	3
●雲端生產數據維運實務	●Cloud Production Data Maintenance and Operation Practice				3	3	0
AI推薦系統 & 聊天機器人實務	AIRecommendation System and Chat Bot Practice				3	3	0
●工業物聯網資安威脅檢測與防護	●Industrial Internet of Things Information Security Threat Detection and Protection				3	3	0
物聯網安全	IoT Security				3	3	0
第四學年 Fourth Year							
機器學習自動化營運實務	Machine Learning Operations Practice	3	3	0			
雲端運算實務	Cloud Computing Practice	3	3	0			
AI智慧醫療影像處理	AIIntelligent Medical Image Processing	3	3	0			
AI智慧機上盒實務	AISmart Machine Box Practice	3	3	0			
●機電整合實務	●Electromechanical Integration Practice	3	3	0			
產學合作專題(一)	Topics on Industry-University Cooperation (I)	3	3	0			
AI機器人學	AIRobotics	3	3	0			
科技英文(一)	English for Science and Technology (I)	3	3	0			
AIAI 生醫感測實務	AIAI biomedical Sensing Practice	3	3	0			
決策分析	Strategic Analysis	3	3	0			
最佳化理論與方法	Optimization Theory and Method	3	3	0			
AIAI 產業應用實務	AIAI Industrial Application Practice	3	3	0			
●PUF 資訊安全技術	●PUF Information Security Technology	3	3	0			
資料視覺化	Data Visualization	3	3	0			
物聯網通訊實務	Internet of Things Communication Practice	3	3	0			
網路攻防概論與實作	Cybersecurity Attack and Defense Practices	3	3	0			
AIAI 虛擬實境實務	AIAI Virtual Reality Practice	3	3	0			
●校外實習(一)	●Extracurricular Intern (I)	12	0	12			
●電腦視覺實務	●Computer Vision Practice	3	3	0			
智慧資安與對抗式攻防實務	Smart Information Security and Adversarial Attack and Defense Practices				3	3	0
●機器人視覺實務	●Robot Vision Practice				3	3	0
光學檢測實務	Optical Inspection Practice				3	3	0
AI機器視覺實務	AIMachine Vision Practice				3	3	0
自動控制理論	Automatic Control Theory				3	3	0
證照檢定輔導	Certification Examination Counseling				3	3	0
●工業機械手臂實務	●Industrial Robotic Arm Practice				3	3	0
●大數據分析實務	●Big data Analysis Practice				3	3	0
系統性創新方法實務	Systematic Innovation Method and Practice				3	3	0
●雲端環境管理與維護實務	●Cloud Environment Management and Maintenance Practice				3	3	0
產學合作專題(二)	Topics on Industry-University Cooperation (II)				3	3	0
●AIoT 控制實務	●AIoT Control Practice				3	3	0
科技英文(二)	English for Science and Technology (II)				3	3	0
●校外實習(二)	●Extracurricular Intern (II)				12	0	12
IIot 資安威脅檢測與防護	Industrial Internet of Things Security Protection				3	3	0

備註 Note:

一、畢業至少應修滿 130 學分【必修 68 學分，選修 62 學分】
Students should complete at least 130 credits before graduation, including 68 required credits, 62 elective credits.

二、本校訂有「國立勤益科技大學學生畢業門檻辦法」，畢業門檻條件：英文能力及自主學習，請依規定辦理。
Our school has established the "National Chin-yi University of Science and Technology Student Graduation Threshold Measures", Graduation threshold: English proficiency and independent study，please follow the regulations.

三、博雅通識課程三大領域中，每一領域至少各修習一門課程，學分總計至少 10 學分。每門課程學分數（時）為 2 學分 2 學時或 3 學分 3 學時。
Among the 3 core areas of liberal education curriculum, students should take 10 or more credits in 3 different areas. The credit hours for each course are either 2 hours course with 2 credits or 3 hours course with 3 credits.

四、學生須選讀至少一門本系所訂定之跨領域學程課程，並有成績登錄。
Students need to register for at least one the course of inter-disciplinary program set by this department and have a record of grades.

五、課程名稱前有標示「●」符號者，為「職能專業課程」。
Courses with a “●” refer to a professional competence course.

六、課程名稱前有標示「△」符號者，為程式設計課程。
Courses with a “△” refers to an application design course.

七、課程名稱前有標示「AI」符號者，為「人工智慧相關課程」。
Courses with an “AI” refer to an artificial intelligence related course.

八、證照與技能畢業門檻(113 入學後)：學生於入學後畢業前須符合以下規定之一方得畢業：
Certification and Skill Graduation Requirements (for students admitted after 2024): Before graduating, students must meet one of the following requirements:

（一）證照：取得至少 1 張本系規定之相關專業證照。
(I) Certification: Obtain at least one professional certification specified by the department.

（二）技能：通過「國際計算機協會程式競賽台灣協會」辦理之大學程式能力檢定(CPE)-進階級(單次測驗至少 2 題，或累計至 3 題)。
(II) Skills: Pass the College Programming Examination (CPE) - Advanced Level, administered by ACM-ICPC Contest Council for Taiwan (at least 2 problems in a single test, or a cumulative total of 3 problems).

九、學生必需滿足以下狀況之一，才可修習大四下學期開設之「證照檢定輔導」課程，延修生可逕行修習「證照檢定輔導」課程，成績及格後納入系畢業門檻。
（一）參加「國際計算機協會程式競賽台灣協會」辦理之大學程式能力檢定(CPE)並至少答對 1 題，且檢具考試成績證明，
（二）參加本系訂定之核心證照檢定至少兩次，並且需要實際出席且檢具考試成績證明。
The students must meet one of the following conditions for studying the “Certification Examination Counseling” course offered in the next semester of the fourth year. The delay-graduated students can study the “Certification Examination Counseling” course directly. With the passing grades of the " Certification Examination Counseling " course, students can pass the graduation threshold.
(一) The students must attend the Collegiate Programming Examination (CPE) and pass it at least 1 question and provide the certificate.
(二) The students must attend core certification exams designated by the department at least twice, with actual attendance and proof of exam results required.

智慧控制跨領域學程 Intelligent Control Interdisciplinary Program

課程選別 Course selection	修課年級 Year of the Program	修課學期 Semester	課程名稱(學分/學時)	**Courses(Credits/ hours course)**
必修 Department Required Courses	2nd	1st	機器學習概論(3/3)	Introduction to Machine Learning (3/3)
必修 Department Required Courses	2nd	2nd	深度學習理論與應用 (3/3)	Deep Learning Theory and Applications(3/3)
專業選修（任選二門）Department Elective Courses (Choose any two courses)	3rd	1st	AI 影像辨識實務 (3/3)	AI Image Recognition Practice(3/3)
	3rd	2nd	工業物聯網數據擷取與應用實務 (3/3)	Data Acquisition and Application Practice using Industrial Internet of Things(3/3)
	3rd	2nd	電腦視覺概論 (3/3)	Introduction to Computer Vision (3/3)
機械系 Department of Mechanical Engineering	3rd	2nd	MATLAB 軟體之工程應用 (3/3)	Applications of MATLAB on Engineering(3/3)
機械系 Department of Mechanical Engineering	3rd	2nd	AI 智慧機械概論(3/3)	Introduction to Intelligent Machinery (3/3)

十、本系共有 3 模組供學生選擇修讀，分別如下：
There are 3 modules for students to choose to study, as below:

模組課程規劃表 Module Course Curriculum

模組 Module	課程選別 Course selection	修課年級 Year of the Program	修課學期 Semester	課程名稱	**Courses**
智慧運算課程模組 Smart Computing	模組選修課程 Module Elective Courses	1st	2nd	計算機網路概論	Introduction to Computer Networks
		2nd	1st	Linux 系統實務	Linux System Practice
		2nd	1st	資料擷取與感測器實務	Data Acquisition and Sensor Practice
		2nd	2nd	資料庫應用	Database Applications
		3rd	1st	邊緣計算實務	Edge Computing Practice

Course Modules		3rd	2nd	容器化部署	Containerized Deployment Practice
		3rd	2nd	生成式人工智慧實務	Generative Artificial Intelligence Practice
		4th	1st	雲端運算實務	Cloud Computing Practice
智慧影像課程模組 Smart Imaging Course Module	模組選修課程 Module Elective Courses	2nd	1st	數位影像處理導論	Introduction to Digital Image Processing
		2nd	2nd	電腦視覺概論	Introduction to Computer Vision
		3rd	1st	OpenCV 影像處理實務	OpenCV Image Processing Practice
		3rd	1st	AI 影像辨識實務	AI Image Recognition Practice
		3rd	2nd	AI 繪圖實務	AI Drawing Practice
		3rd	2nd	智慧自動光學檢測實務	Smart Automated Optical Inspection Practices
		4th	1st	智慧醫療影像處理	Intelligent Medical Image Processing
		4th	2nd	機器人視覺實務	Robot Vision Practice
智慧數據課程模組 Smart Data Course Module	模組選修課程 Module Elective Courses	2st	2nd	大數據與資料探勘實務	Big Data and Data Mining Practice
		2nd	2st	資訊安全導論	Introduction to Information Security
		3nd	1st	雲端數據分析與視覺化實務	Cloud Data Analysis and Visualization Practice
		3nd	1nd	特徵工程實務	Feature Engineering Practice
		3nd	2nd	軟體工程實務	Software Engineering Practice
		3rd	2st	生成模型與資料增強實務	Generative Models and Data Augmentation Practice
		4rd	1st	機器學習自動化營運實務	Machine Learning Operations Practice
		4rd	2nd	智慧資安與對抗式攻防實務	Smart Information Security and Adversarial Attack and Defense Practices

十一、為因應法規變更、評鑑建議或政府計畫規定等外在因素，本系保有調整學分計畫之權利。若有修訂，將於學期開始前公告，並明確說明修訂內容、影響範圍及相關配套措施，以保障學生權益。

The department reserves the right to adjust the curriculum in response to external factors such as changes in regulations, suggestions of evaluation and accreditation, or government program regulations. If there are any revisions, will be announced before the start of the semester, and the revised content, scope of impact, and related supporting measures will be clearly stated to protect the rights and interests of students.