

National Chin-Yi University of Technology  
Curriculum Planning of 2022 Four-Year Degree in  
Department of Artificial Intelligence and Computer Engineering

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			
全民國防教育軍事訓練(一)	All-Out Defense Education Military Training (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
全民國防教育軍事訓練(二)	All-Out Defense Education Military Training (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) (無必修課程)							
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			
△物件導向程式設計	△Object-oriented 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
△Python 程式設計	△Python 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			
計算機組織	Computer Organization	3	3	0			
資料結構	Data Structures	3	3	0			
作業系統	Operating Systems				3	3	0
演算法	Algorithms				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							

AI△●實務專題(Ⅰ)	AI△●Project Study (I)	2	6	0			
AI△●實務專題(Ⅱ)	AI△●Project Study (II)				2	6	0
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
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			
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			
線性代數	Linear Algebra				3	3	0
△網頁設計與網站管理	△Web Design and Website Management				3	3	0
第二學年 Second Year							
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			
AI AI 應用數學概論	AI Introduction to AI Applied Mathematics	3	3	0			
●資料擷取與感測器實務	●Data Acquisition and Sensor Practice	3	3	0			
多媒體概論	Introduction to Multimedia	3	3	0			
職場倫理	Workplace Ethics	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			
計算機網路概論	Introduction to Computer Networks				3	3	0
AI Python 機器學習應用	AI Machine Learning Applications Using Python				3	3	0
系統架構與軟體工程實務	System Architecture and Software Engineering Practice				3	3	0
AI 數據分析與機器學習實務	AI Data Analysis and Machine Learning Practice				3	3	0
●資料庫系統	●Database Systems				3	3	0
●數位影像處理導論	●Introduction to Digital Image Processing				3	3	0
●Linux 系統實務	●Linux System Practice				3	3	0
離散數學	Discrete Mathematics				3	3	0
生產與作業管理實務	Production and Operation Management Practice				3	3	0
第三學年 Third Year							
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			
●OpenCV 影像處理實務	●OpenCV Image Processing Practice	3	3	0			
AI AI 影像辨識實務	AI AI Image Recognition Practice	3	3	0			
●大數據與資料探勘實務	●Big Data and Data Mining Practice	3	3	0			
資訊安全導論	Introduction to Information 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
●電腦視覺概論	●Introduction to Computer Vision				3	3	0
3D 列印工程實務	3D Printing Engineering 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

AI 深度學習程式實務	AI Deep Learning Program Practice				3	3	0
AI 商品影像辨識實務	AI Product Image Recognition Practice				3	3	0
AI 自然語言處理	AI Natural Language Processing				3	3	0
△遊戲程式設計實務	△Game Programming Practice				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 AOI 工程應用實務	AI AOI Engineering Application Practice				3	3	0
●容器化部署實務	●Containerized Deployment Practice				3	3	0
推薦系統 & 聊天機器人實務	Recommendation System & 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
●邊緣計算實務	●Edge Computing Practice				3	3	0
第四學年 Fourth Year							
●電腦視覺實務	●Computer Vision Practice	3	3	0			
AI 智慧機上盒實務	AI Smart Machine Box Practice	3	3	0			
●機電整合實務	●Electromechanical Integration Practice	3	3	0			
光學系統實務	Optical System 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	AI Robotics	3	3	0			
科技英文(一)	English for Science and Technology (I)	3	3	0			
軟體工程實務	Software Engineering Practice	3	3	0			
AI 深度學習之生醫影像分析實務	AI The Practice of Deep Learning Biomedical Image analysis	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			
雲端運算實務	Cloud Computing Practice	3	3	0			
AI 產業應用實務	AI Industrial Application Practice	3	3	0			
●PUF 資訊安全技術	●PUF Information Security Technology	3	3	0			
AI 智慧影像辨識	AI Intelligent Image Recognition	3	3	0			
物聯網通訊實務	Internet of Things Communication Practice	3	3	0			
光學檢測實務	Optical Inspection Practice				3	3	0
自動控制理論	Automatic Control Theory				3	3	0
●工業機械手臂實務	●Industrial Robotic Arm Practice				3	3	0
AI 虛擬實境實務	AI Virtual Reality 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
資通訊專案管理	Information and Communication Project Management				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(一)	●Extracurricular Intern (I)	12	0	12			
●校外實習(二)	●Extracurricular Intern (II)				12	0	12

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、學生須選讀本系所訂跨領域學程課程 並有成績登錄。

Students need to register for 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、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.

智慧控制跨領域學程			
課程選別	學年	課程名稱(學分/學時)	Courses(Credits/ hours course)

必修	二下	演算法 (3/3)	Algorithms(3/3)
必修	二下	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)	三上	AI 影像辨識實務 (3/3)	AI Image Recognition Practice(3/3)
	三下	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
	三下	電腦視覺實務 (3/3)	Computer Vision Practice(3/3)
機械系 (任選一門)	三上	LabVIEW 程式設計與應用 (3/3)	LabVIEW Programming and Application(3/3)
	三下	MATLAB 軟體之工程應用	Applications of MATLAB on Engineering(3/3)
機械系	四下	AI 智慧機械概論(3/3)	Introduction to Intelligent Machinery (3/3)