國立勤益科技大學 111 學年度日間部四年制智慧自動化工程系學分計畫表
National Chin-Yi University of Technology
Curriculum for 2022 Four-Year Bachelor Program of Department of Intelligent Automation Engineering

科目	Courses	上學期 First Semester			下學期 Second Semester		
		學分 Credits	正課 Lecture	實習 Practice	學分 Credits	正課 Lecture	實習 Practice
共同必修科目(28 學分) General Required Courses (28credits)							
第一學年First Year(16)							
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			
音樂鑑賞	Music Appreciation	1	1	0			
體育(一)	Physical Education (I)	0	2	0			
全民國防教育軍事訓練(一)	National Defense Education and Military Training (I)	0	2	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)	National Defense Education and Military Training (II)				0	2	0
第二學年Second Year(6)							
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(6)							
博雅通識課程	Liberal Education	2	2	0			
博雅通識課程	Liberal Education				2	2	0
憲法與民主	Constitution and Democracy				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(53 學分) Department Required Courses (53credits)							
第一學年First Year(19)							
微積分(一)	Calculus (I)	3	3	0			
●△程式語言(一)	Computer Programming (I)	3	3	0			
●工廠實習	Workshop Practices	1	0	3			
●電腦輔助機械製圖	Computer Aided Mechanical Drawing	1	0	3			
微積分(二)	Calculus (II)				3	3	0
●△程式語言(二)	Computer Programming (II)				3	3	0
●「AI」智慧自動化工程概論	Introduction to Intelligent Automation Engineering				2	2	0
靜力學	Statics				3	3	0
第二學年Second Year(24)							
工程數學	Engineering Mathematics	3	3	0			
●精密量測原理與實習	Precision Measurement and Practice	3	0	3			
動力學	Dynamics	3	3	0			
材料力學	Mechanics of Materials	3	3	0			
●△順序控制與實習	Sequence Control and Practice				3	0	3
●工業電子學與實習	Industrial Electronics and Practice				3	0	3
熱力學	Thermodynamics				3	3	0
●機構學實務與應用	Mechanism Practice and Application				3	1	2
第三學年Third Year(10)							
●「AI」△機器學習	Machine Learning	3	3	0			
智慧製造實務技術	Intelligent Manufacturing Technology Practice				3	0	3
實務專題（一）	Project Study (I)	2	0	6			
實務專題（二）	Project Study (II)				2	0	6
第四學年Fourth Year (無必修課程No General Required Courses)							

科目	Courses	上學期 First Semester			下學期 Second Semester		
		學分 Credits	正課 Lecture	實習 Practice	學分 Credits	正課 Lecture	實習 Practice
共同選修科目 General Electives Courses							
第一學年First Year (無排定共同選修課程 None)							
第二學年Second Year							
全民國防教育軍事訓練(三)	National Defense Education and Military Training(Ⅲ)	1	2	0			
全民國防教育軍事訓練(四)	National Defense Education and Military Training(IV)				1	2	0
第三學年Third Year							
體育選修	Physical Education, Elective Course	1	2	0			
全民國防教育軍事訓練(五)	National Defense Education and Military Training(V)	1	2	0			
體育選修	Physical Education, Elective Course				1	2	0
第四學年Fourth Year (無必修課程)							
體育選修	Physical Education, Elective Course	1	2	0			
體育選修	Physical Education, Elective Course				1	2	0
專業選修科目 Professional Electives Courses							
第一學年First Year (無排定專業選修課程 None)							
選修學程 第二學年Second Year							
共同專業選修							
●半導體材料及先進材料概論	Introduction to Semiconductor Materials and Advanced Materials	3	3	0			
●生產品質工程實務	Production Quality Engineering Practice	3	3	0			
●風能系統概論	Introduction to wind power generation system	3	3	0			
●「AI」工業 4.0 概論	Introduction to Industry 4.0				2	2	0
●「AI」△工業影像檢測與分析	Industrial Image Detection and Analysis				3	0	3
●精密模具設計與加工	Precision Mold Design and Manufacturing				3	0	3
●半導體設備設計應用概論	Introduction to Semiconductor Equipment Design and Application				3	3	0
選修學程 第三學年Third Year							
共同專業選修							
●自動控制與實習	Automatic Control Practices	3	0	3			
●△微電腦控制與實習	Microcomputer control and practice	3	0	3			
●△感測器原理應用與實習	Practice and Applications of Sensors	3	0	3			
●機械設計實習	Mechanical Design Practice	3	0	3			
●電腦輔助熱流分析	Computer Aided Thermal-Fluid Analysis	3	1	2			
流體力學	Fluid Mechanics	3	3	0			
●離岸風電運維與自動化實務	Offshore Wind Farm: O&M and Automation Practice	3	3	0			
●△物聯網應用與實習	Internet of Things and Practice				3	0	3
●工具機系統設計實務	Practice and Design of Machine Tool System				3	3	0
●△網宇實體系統應用實務	Practice of Cyber Physical System				3	0	3
●「AI」△人工智慧與數位設計技術	Artificial Intelligence and Digital Design Technology				3	0	3
校外實習(暑期)	Internship on Summer Session				2	0	2
工程管理	Engineering Management				2	2	0
●電腦輔助工程分析	Computer Aided Engineering Analysis				3	0	3
機光電整合應用模組 選修學程 Category of Opto-Mechatronics and Application							
●數值分析	Numerical Analysis	3	3	0			
●△自動化光學檢測	Automated Optical Inspection	3	1	2			
●機光電整合系統設計與實習	Mechatronics System Design and Practice				3	0	3
●△資料處理與統計分析	Data Processing and Statistical Analysis				3	2	1
智慧製造應用模組 選修學程 Category of Intelligent Manufacturing and Application							
●多軸精密加工實務技術	Practical Technology of Multi-axis Precision Machining	3	3	0			
●雲端生產數據導論	Introduction to Cloud Production Data	3	3	0			
●「AI」機械系統故障診斷與預測實務	Fault Diagnosis and Prediction of Mechanical System				3	0	3
●△機器人程式設計	Programing and Robotics				3	0	3
第四學年Fourth Year							
共同專業選修							
●工具機控制器實務	Practice of Controllers for Machine Tools	3	0	3			
●△工業 APP 設計實務	Practice of Industrial APP Design	3	0	3			
企業社會責任	Corporate Social Responsibility	3	2	1			
●校外實習(一)	Internship (I)	9	0	9			
專利分析	Patent Analysis	2	2	0			

科技英文	English for Science and Technology	2	2	0			
●電腦輔助熱流分析	Computer Aided Thermal-Fluid Analysis	3	1	2			
●「AI」巨量資料處理概論	Introduction to Mass Data Processing				3	3	0
●「AI」智能工廠實務	Smart Factory Practice				3	0	3
●系統工程概論	Introduction to System Engineering				3	2	1
●「AI」企業智慧自動化的輔導案例分析	Case Study of Enterprise Intelligent Automation Counseling				3	1	2
●校外實習(二)	Internship (II)				9	0	9
工業安全	Industrial Safety				2	2	0
機光電整合應用模組 選修學程 Category of Opto-Mechatronics and Application							
●△工業用機器人	Industrial Robot	3	3	0			
●醫工設備概論	Introduction to Biomedical Engineering Instrumentation	3	3	0			
●自動化量測實務	Automated Measurement Practice				3	0	3
●「AI」△智能設備開發應用實務	Equipment Development and Application Practice				3	0	3
智慧製造應用模組 選修學程 Category of Intelligent Manufacturing and Application							
●「AI」△大數據於智慧製造應用	Big Data in Smart Manufacturing Application	3	3	0			
●高等電腦數位同步模擬分析	Advanced Computer Digital Synchronization Simulation Analysis	3	3	0			
●「AI」△智慧機械聯網整合技術	Networking Technology of Intelligent Mechanical				3	0	3
●先進製造實務	Advanced Manufacturing Practice				3	0	3

備註 Note:

一、畢業至少應修滿 131 學分【必修 81 學分，選修至少 50 學分(須含本系專業選修至少 28 學分)】
　　Students should complete at least 131 credits before graduation, includes 69 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。
　　Students should fulfill "National Chin-Yi University of Science and Technology Student Graduation Threshold Measures", Graduation threshold: English proficiency and independent study.

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、學生皆需修習本系開設「跨領域學分學程」所有課程，若修畢所有學程課程及格者，可取得修畢跨領域學分學程證明書，未取得本證明書者仍可畢業.
　　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.

工業 4.0 跨領域學程		
課程選別	學年	課程名稱(學分/學時)
必修	一下	程式語言(二)(3/3)
選修	二下	工業 4.0 概論(2/2)
必修	三上	機器學習(3/3)
專業選修(任選兩門)	三下	物聯網應用與實習(3/3)
	三下	機械系統故障診斷與預測實務(3/3)
	四上	大數據於智慧製造應用(3/3)
外系選修	三下	雲端運算概論(3/3)
外系選修	四上	巨量資料應用(3/3)