

國立勤益科技大學 113 學年度日間部二年制冷凍空調與能源系國際學生產學合作專班學分計畫表
National Chin-Yi University of Technology
Curriculum Planning of 2024 Two-Year College Industry-Academia Collaboration Program for
Mechatronics, Energy and Environment Control in Department of Refrigeration, Air Conditioning and
Energy Engineering

112.10.11 系課程會議審議通過
112.10.27 系務會議審議通過
112.11.23 院課程會議審議通過
112.12.07. 校課程委員會及 112.12.21. 臨時教務會議審議通過
113.04.22 系課程會議審議通過
113.05.08 系務會議審議通過
113.5.14 院課程會議審議通過
113.5.21. 校課程委員會及 113.6.6. 臨時教務會議審議通過
113.09.26 系課程會議審議通過
113.10.16. 系務會議審議通過
113.11.19 院課程會議審議通過
113.12.5. 校課程委員會及 113.12.24. 臨時教務會議審議通過
114.04.16 系課程會議審議通過
114.04.18 系務會議審議通過
114.5.6 院課程會議審議通過
114.5.20. 校課程委員會及 114.6.5. 臨時教務會議審議通過
115.03.03 系課程會議及 115.03.18 系務會議審議通過
115.04.22 系課程會議及 115.05.06 系務會議審議通過
115.6.4 校課程會議及 115.6.18 教務會議審議通過

科目 Courses	第一學年 First Year						第二學年 Second Year						第三學年 Third Year					
	上學期 First Semester			下學期 Second Semester			科目 Courses	上學期 First Semester			下學期 Second Semester			科目 Courses	上學期 First Semester			
	學分 Credits	正課 Lecture	實習 Internship	學分 Credits	正課 Lecture	實習 Internship		學分 Credits	正課 Lecture	實習 Internship	學分 Credits	正課 Lecture	實習 Internship		學分 Credits	正課 Lecture	實習 Internship	
共同科目 (17 學分) General Required Courses (17 credits hours)																		
華語聽說(一) Chinese Listening and speaking	3	5	0				華語聽說(三) Chinese Listening and speaking (III)	3	3	0								
華語讀寫(一) Chinese Reading and writing	3	5	0															
體育(一) Physical Education (I)	0	2	0															
華語聽說(二) Chinese Listening and Speaking (II)				3	5	0												
華語讀寫(二) Chinese Reading and Writing (II)				3	5	0												
藝術與哲學 Art and philosophy				2	2	0												
體育(二) Physical Education (II)				0	2	0												
小計	6	12	0	8	14	0		3	3	0								
校訂必修科目 (29 學分) Professional Required Courses (29 credits hours)																		
工程數學(一) Engineering Mathematics (I)	3	3	0				實務專題 Project Study	2	0	6								
熱力學 Thermodynamics	3	3	0				★產業實習(一) Industry internship(I)				9	0	9					
冷凍空調基礎裝修實務 Basic Practices of Refrigeration and Air-Conditioning	3	2	2															
空調工程與實習 Air-Conditioning Engineering and Practices				3	2	2												
冷凍工程及實習 Refrigeration Engineering and Practices				3	2	2												
機電整合實務 Mechatronics integration practice				3	2	2												
小計	9	8	2	9	6	6	小計	2	0	6	9	0	9					
校訂選修科目 (26 學分) Professional Electives Courses (26 credits hours)																		
自動控制 Automatic Control	3	3	0				工業安全 Industry Safety	3	3	0				★產業實習(二) industry internship (II)	9	0	9	

必修

專業選

修	燃料電池概論 Introduction to Fuel Cells	3	3	0			現代控制 Modern Control	3	3	0			通風工程 Ventilation and Air Moving Engineering	3	3	0		
	變頻節能控制 Variable Frequency Energy Saving Control	3	3	0			精密加工技術 Precision Machining Technique	3	3	0			綠建築與照明節能 Energy Saving of Green Building and Lighting	3	3	0		
	虛擬儀控軟體應用 Basic Programming and Application of Virtual Instrument Software	3	3	0			熱交換器設計 Heat Exchanger Design	3	3	0			無塵室技術 Cleanroom Technology	3	3	0		
	環境控制 Environmental control	3	3	0			工程力學 Engineering Mechanics	3	3	0			冷凍空調系統故障分析 Refrigeration and Air-Conditioning System Problem Diagnostic and Repair Procedure	3	3	0		
	模糊控制概論 Fuzzy Control Theory				3	3	0	電腦輔助設計與實習 Computer Aided Design	3	1	2			振動與噪音控制 Vibration and Noise Control	3	3	0	
	電腦立體製圖 Computer 3D graphics				3	3	0	風力發電 Wind Power Generation				3	3	0	特殊空調系統 Distinctive Air-Conditioning System	3	3	0
	消防控制概論 Introduction to Fire Fighting Engineering				3	3	0	專案研究 Project research				3	3	0	能源工程原理與實習 Energy Engineering Principle and Practices	3	2	2
	工程數學(二) Engineering Mathematics (II)				3	3	0	流場分析專業軟體應用 Computational Fluid Dynamics				3	3	0				
	電子設備冷卻技術 Cooling Technique of Electronic Equipment				3	3	0	冷凍空調工程規劃及管理 Planning and Management of Refrigeration and Air-Conditioning Engineering				3	3	0				
	科技溝通 Communication of Science and Technology				3	3	0											

備註	<p>一、 畢業至少應修72學分(必修46學分，本系專業選修26學分)。 Students should complete at least 72 credits before graduation, including 46 required credits, 26 elective credits.(elective credits should have at least 26 credits from department elective courses)</p> <p>二、 畢業前應通過「華語文能力測驗A2級」。 Students should pass Level A2 on the TOCFL (Test of Chinese as a Foreign Language) to meet the Chinese Proficiency requirement for graduation.</p> <p>三、 學生應於三年級第一學期修畢華語輔導課程(0學分5學時)。 Students should complete the Extracurricular Chinese Class in the first semester of the third grade.</p> <p>四、 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.</p> <p>五、 註記★為校外實習課程，說明如下： 產業實習(一)為必修課程，產業實習(二)為選修課程，因故無法參與校外實習課程者，每學期9學分，須由「實習替代課程選修科目」中三門課程修讀。 Courses marked with ★ indicate off-campus internship programs. The details are as follows: Industry internship (I) is required course, while Industry internship (II) is elective course. Students who are unable to participate in off-campus internship programs for any reason are required to take 9 credits of courses per semester, including three courses selected from the "Alternative Courses for Internship" list.</p>															
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實習替代課程選修科目 Alternative Courses for Internship					
課程名稱 Course Name	學分 Credits	學時 Hours	課程名稱 Course Name	學分 Credits	學時 Hours
虛擬儀控軟體應用與實習 Basic Programming Application and Practice of Virtual Instrument Software	3	3	冷凍空調設備與實習 Equipment and Practices of Refrigeration and Air-Conditioning	3	4
專案研究與專題實務 Project Study and Practice	3	3	流場分析專業軟體應用與實習 Computational Practice Fluid Dynamics	3	3
能源工程原理與實習	3	4			

Energy Engineering Principle and Practices					
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