

國立勤益科技大學 113 學年度進修部四年制產學訓模式  
冷凍空調與能源系冷凍空調與能源專班學分計畫表

National Chin-Yi University of Technology Continuing Education Division  
Curriculum for 2024 Department of Refrigeration, Air-Conditioning, and Energy Engineering Four-Year Bachelor Program of Refrigeration, Air-Conditioning and Energy Engineering Industry-Academia-Training

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 校課程委員會議及 112.12.21 臨時教務會議審議通過  
113.12.05 校課程委員會議及 113.12.24 臨時教務會議審議通過  
114.05.28 系課程會議審議通過  
114.06.11 系務會議審議通過  
114.11.20 院課程會議修訂通過  
114.12.04 校課程委員會議及 114.12.23 臨時教務會議審議通過

科目	Courses	上學期First Semester			下學期Second Semester			
		學分 Credit	正課 Lecture	實習 Internship	學分 Credit	正課 Lecture	實習 Internship	
共同必修科目(24學分)General Required Courses(24credits hours)								
第一學年First Year								
國文(一)	Chinese (I)	2	2	0				
勞動法規	Laws and Regulations of Labor	3	3	0				
體育(一)	Physical Education (I)	0	2	0				
工程倫理	Ethics in Engineering				2	2	0	
國文(二)	Chinese (II)				2	2	0	
體育(二)	Physical Education (II)				0	2	0	
第二學年Second Year								
人際溝通	Interpersonal Communication	3	3	0				
英文(一)	English (I)	3	3	0				
體育(三)	Physical Education (III)	0	2	0				
英文(二)	English (II)				3	3	0	
體育(四)	Physical Education (IV)				0	2	0	
第三學年Third Year								
音樂鑑賞	Music Appreciation	2	2	0				
藝術概論	Introduction to Arts	2	2	0				
通識領域課程	Liberal Education				2	2	0	
科目	Courses	上學期First Semester			下學期Second Semester			
		學分 Credit	正課 Lecture	實習 Internship	學分 Credit	正課 Lecture	實習 Internship	
專業必修科目(68學分)Department Required Courses(68credits hours)								
第一學年First Year								
*冷凍空調原理	Principles of Refrigeration and Air Conditioning	3	3	0				
*電子學及實習(一)	Electronics and Practice (I)	2	1	3				
*電機應用及實習	Electrical Application and Practices	3	2	2				
物理(一)	Physics (I)	3	3	0				
微積分(一)	Calculus (I)	3	3	0				
*電腦輔助繪圖	Computer Aided Drawing				3	3	0	
工業安全與衛生	Industry Safety and Hygiene				3	3	0	
冷凍空調產業概論	Introduction to Refrigeration and Air-Conditioning Industry				3	3	0	
第二學年Second Year								
△計算機程式	Computer Program	3	3	0				
企業實習(一)	Internship (I)	4	0	4				
熱力學	Thermodynamics	3	3	0				
企業實習(二)	Internship (II)				4	0	4	
電路學	Electric Circuits				3	3	0	
第三學年Third Year								
企業實習(三)	Internship (III)	4	0	4				
冷凍工程	Refrigeration Engineering	3	3	0				
空調工程	Air-Conditioning Engineering	3	3	0				
企業實習(四)	Internship (IV)				4	0	4	
能源工程	Energy Engineering				3	3	0	
第四學年Fourth Year								
企業實習(五)	Internship (V)	4	0	4				
流體機械	Fluid Machinery	3	3	0				
企業實習(六)	Internship (VI)				4	0	4	
科目	Courses	上學期First Semester			下學期Second Semester			
		學分 Credit	正課 Lecture	實習 Internship	學分 Credit	正課 Lecture	實習 Internship	
專業選修科目Department Electives Courses								
第一學年First Year								
*冷凍空調基礎裝修實務	Basic Practices for Refrigeration and Air-Conditioning Installation and Repair	3	2	2				
*基礎冷凍空調實習	Fundamentals of Refrigeration and Air-Conditioning Practice	3	2	2				
*太陽能工程	Solar Energy Engineering				2	2	0	

*冷凍空調設計及實習	HVAC System Design and Practice				3	2	2							
*冷凍空調設備與實習	HVAC and R Equipment and Practice				3	2	2							
*冷凍空調裝修實務	Practice of Refrigeration and Air-Conditioning Installation and Maintenance				3	2	2							
第二學年Second Year														
△PLC應用	PLC Application	3	3	0										
冷凍冷藏應用技術	Application Technique of Freezing and Cold Storage	3	3	0										
低溫工程	Cryogenic Engineering				3	3	0							
電腦軟體應用及實習	Computer Software Application and Practice				3	3	0							
第三學年Third Year														
用電設備檢驗	Electrical Equipment Inspection	3	3	0										
消防工程概論	Introduction to Fire Engineering	3	3	0										
工業電子	Industrial Electronics	3	3	0										
冷凍空調自動控制	Refrigeration and Air Conditioning Automatic Control				3	3	0							
第四學年Fourth Year														
冷凍空調工程規劃與管理	Planning and Management of Refrigeration and Air-Conditioning Engineering	3	3	0										
能源管理技術	Energy Management Technology	3	3	0										
通風工程	Ventilation and Air Moving Engineering	3	3	0										
無塵室技術	Cleanroom Technology	3	3	0										
特殊空調	Distinctive Air-Conditioning	3	3	0										
冷凍空調系統故障分析	Troubleshooting of Refrigeration and Air-Conditioning System				3	3	0							
冷凍空調節能技術	Energy Saving Techniques for HVAC and R				3	3	0							
綠建築與照明節能	Energy Saving of Green Building and Lighting				3	3	0							
科目	Courses				上學期First Semester		下學期Second Semester							
					學分 Credit	正課 Lecture	實習 Internship	學分 Credit	正課 Lecture	實習 Internship				
共同選修科目General Elective Courses														
第一學年First Year														
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														
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							
第三學年Third Year														
全民國防教育軍事訓練（五）	All-Out Defense Education Military Training (V)	1	2	0										
學分/時數統計 Credit/Hour Total	第一學年First Year			第二學年Second Year			第三學年Third Year			第四學年Fourth Year				
	上學期 First Semester		下學期 Second Semester		上學期 First Semester		下學期 Second Semester		上學期 First Semester		下學期 Second Semester			
學分 Credit	學時 Hour	學分 Credit	學時 Hour	學分 Credit	學時 Hour	學分 Credit	學時 Hour	學分 Credit	學時 Hour	學分 Credit	學時 Hour	學分 Credit	學時 Hour	
必修科目學分/時數 Required Courses Credit / Hour	19	24	13	15	16	18	10	12	14	14	9	9	7	7
最低選修科目學分/時數 Minimum Electives Courses Credit / Hour	6	8	11	14	0	0	3	3	0	0	3	3	3	9
總學分數/時數累計 Credits / Hours Total	25	32	24	29	16	18	13	15	14	14	12	12	10	10

備註Note:

- 一、 畢業至少應修滿 128 學分【必修 92 學分，選修至少 36 學分(其中至少需含本系專業選修 36 學分)】。  
Students should complete at least 128 credits before graduation, including 92 required credits, 36 elective credits (elective credits should have at least 36 credits from department elective courses).
- 二、 通識教育學院所開設之「博雅通識課程」學分數(時)為2學分2學時或3學分3學時，經 101 學年度第二學期校課程委員會會議通過。  
Liberal Arts General Study courses provided by College of General Education, are divided into 2 hours course with 2 credits or 3 hours course with 3 credits, ratified by the School Course Committee in 2012.
- 三、 第一學年必須選讀\*中彰投分署基礎訓練課程28學分。  
In the first academic year, students must select 28 credits of basic training courses at Taichung-Changhua-Nantou Regional Branch(中彰投分署), Workforce Development Agency, Ministry of Labor.
- 四、 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.
- 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「AI」符號者，為「人工智慧相關課程」。  
Courses with an “AI” refer to an artificial intelligence related course.
- 七、 畢業前須取得冷凍空調裝修乙級技術士證照。  
All students must obtain a Level B technician certificate for refrigeration and air-conditioning before graduation.
- 八、 為因法規變更、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.