

國立勤益科技大學 113 學年度進修部四年制產學攜手合作計畫
 冷凍空調與能源系冷凍空調能源產業專班學分計畫表
 National Chin-Yi University of Technology Continuing Education Division
 Curriculum for 2024 Four-Year Bachelor Program of Department 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
 113.04.22 系課程會議審議通過
 113.05.08 系務會議審議通過
 113.05.14 院課程會議審議通過
 113.5.21 校課程委員會議及 113.6.6 臨時教務會議審議修訂通過
 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 院課程會議審議通過
 114.06.11 系務會議審議通過
 114.11.20 院課程會議審議通過
 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				
微積分(一)	Calculus (I)	3	3	0				
職場倫理與生涯規劃	Business Ethics and Career Planning	3	3	0				
體育(一)	Physical Education (I)	0	2	0				
國文(二)	Chinese (II)				2	2	0	
微積分(二)	Calculus (II)				3	3	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				
英文(二)	English (II)				3	3	0	
第三學年Third Year								
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(69學分)Department Required Courses(69credits hours)								
第一學年First Year								
△計算機程式	Computer Program	3	3	0				
物理(一)	Physics (I)	3	3	0				
產業實務實習(一)	Industrial Practice Internship (I)	3	0	6				
工業安全與衛生	Industry Safety and Hygiene				3	3	0	
產業實務實習(二)	Industrial Practice Internship (II)				3	0	6	
電子學	Electronics				3	3	0	
熱力學	Thermodynamics				3	3	0	
第二學年Second Year								
工程數學(一)	Engineering Mathematics (I)	3	3	0				
冷凍空調原理	Principles of Refrigeration and Air-Conditioning	3	3	0				
流體力學	Fluid Mechanics	3	3	0				
產業實務實習(三)	Industrial Practice Internship (III)	3	0	6				
太陽能工程	Solar Energy Engineering				3	3	0	
冷凍工程	Refrigeration Engineering				3	3	0	
產業實務實習(四)	Industrial Practice Internship (IV)				3	0	6	
電路學	Electric Circuits				3	3	0	
第三學年Third Year								
空調工程	Air-Conditioning Engineering	3	3	0				
能源工程	Energy Engineering	3	3	0				
產業實務實習(五)	Industrial Practice Internship (V)	3	0	6				
流體機械	Fluid Machinery				3	3	0	
產業實務實習(六)	Industrial Practice Internship (VI)				3	0	6	
第四學年Fourth Year								
冷凍空調節能技術	Energy Saving Techniques for HVAC and R	3	3	0				
產業實務實習(七)	Industrial Practice Internship (VII)	3	0	6				
產業實務實習(八)	Industrial Practice Internship (VIII)				3	0	6	
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								
冷凍冷藏應用技術	Application Technique of Freezing and Cold Storage				3	3	0	
物理(二)	Physics (II)				3	3	0	

程式設計	Programming Design				3	3	0					
第二學年Second Year												
用電設備檢驗	Electrical Equipment Inspection	3	3	0								
冷凍空調基礎裝修實務	Basic Practices for Refrigeration and Air-Conditioning Installation and Repair	3	3	0								
電腦輔助設計	Computer Aided Design	3	3	0								
燃料電池概論	Introduction to Fuel Cells	3	3	0								
△PLC應用	PLC Application				3	3	0					
低溫工程	Cryogenic Engineering				3	3	0					
冷凍空調裝修實務	Installation and Maintenance Practices of HVAC and R				3	3	0					
電腦軟體應用及實習	Computer Software Application and Practice				3	3	0					
熱傳學	Heat Transfer				3	3	0					
第三學年Third Year												
工業電子	Industrial Electronics	3	3	0								
消防工程概論	Introduction to Fire Engineering	3	3	0								
氫能技術與應用	Hydrogen Energy Technology and Applications	3	3	0								
現代控制	Modern Control	3	3	0								
節能服務技術	Energy Service Technology	3	3	0								
變頻節能控制	Frequency Conversion Energy Conservation Control	3	3	0								
工業管理	Industrial Management				3	3	0					
冷凍空調自動控制	Refrigeration and Air Conditioning Automatic Control				3	3	0					
冷凍空調系統故障分析	Troubleshooting of Refrigeration and Air-Conditioning System				3	3	0					
冷凍空調設計	HVAC System Design				3	3	0					
室內配線	Indoor Wiring				3	3	0					
風力發電	Wind Power				3	3	0					
第四學年Fourth Year												
品質管理	Quality Management	3	3	0								
室內環境空氣品質	Indoor Environmental Air Quality	3	3	0								
特殊空調	Distinctive Air-Conditioning	3	3	0								
通風工程	Ventilation and Air Moving Engineering	3	3	0								
勞動法規	Laws and Regulations of Labor	3	3	0								
線性電路	Linear Circuits	3	3	0								
太陽能光電安裝實務	Solar Photovoltaics Installation Practice				3	3	0					
冷凍空調工程及管理	Refrigeration and Air Conditioning Engineering and management				3	3	0					
能源管理技術	Energy Management Technology				3	3	0					
智慧財產權	Intellectual Property Rights				3	3	0					
無塵室技術	Cleanroom Technology				3	3	0					
綠建築與照明節能	Energy Saving of Green Building and Lighting				3	3	0					
科目	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			
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
必修科目學分/時數 Required Courses Credit / Hour	17	22	17	22	18	21	15	18	11	14	6	9
最低選修科目學分/時數 Minimum Electives Courses Credit / Hour	0	0	3	3	6	6	6	6	6	6	6	6
總學分數/時數累計 Credits / Hours Total	17	22	20	25	24	27	21	24	17	20	12	15

備註Note:

- 畢業至少應修滿 130 學分【必修 93 學分，選修至少 37 學分(其中至少需含本系專業選修 30 學分)】。
Students should complete at least 130 credits before graduation, including 93 required credits, 37 elective credits (elective credits should have at least 30 credits from department elective courses).
- 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. Four-year students in the Division of Continuing Education should take 2 courses in different fields for a minimum of 4 credits.
- 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.
- 畢業前需取得冷凍空調裝修丙級技術士（含）以上、太陽光電設置乙級證照或室內配線丙級資格。
Before graduation, each student should pass qualifications Level C or above for Refrigerating & Air Conditioning, Level B for Installations of solar photovoltaic system or Level C for Commercial Wiring.
- 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.

