

國立勤益科技大學進修部四年制114學年度冷凍空調與能源系學分計畫表

National Chin-Yi University of Technology Continuing Education Division  
Curriculum for 2025 Four-Year Bachelor Program of Department of Industrial Engineering and Management

113.10.16 系課程會議審議通過  
113.10.23 系務會議審議通過  
113.12.05 校課程委員會及113.12.24 臨時教務會議審議通過  
114.12.04 校課程委員會及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(28學分)General Required Courses(28credits hours)							
第一學年First Year							
國文(一)	Chinese (I)	3	3	0			
大一英文(一)	Freshman English (I)	2	2	0			
英文聽講(一)	English Listening and Speaking (I)	1	1	0			
體育(一)	Physical Education (I)	0	2	0			
國文(二)	Chinese (II)				3	3	0
大一英文(二)	Freshman English (II)				2	2	0
英文聽講(二)	English Listening and Speaking (II)				1	1	0
體育(二)	Physical Education (II)				0	2	0
第二學年Second Year							
體育(三)	Physical Education (III)	0	2	0			
博雅通識課程	Liberal Education Curriculums	2	2	0			
憲法與民主(一)	Constitution and Democracy (I)	2	2	0			
博雅通識課程	Liberal Education Curriculums				2	2	0
憲法與民主(二)	Constitution and Democracy (II)				2	2	0
體育(四)	Physical Education (IV)				0	2	0
第三學年Third Year							
歷史與文化(一)	History and Culture (I)	2	2	0			
音樂鑑賞(一)	Music Appreciation (I)	1	1	0			
藝術鑑賞(一)	Art Appreciation (I)	1	1	0			
音樂鑑賞(二)	Music Appreciation (II)				1	1	0
歷史與文化(二)	History and Culture (II)				2	2	0
藝術鑑賞(二)	Art Appreciation (II)				1	1	0
專業必修科目(58學分)Department Required Courses(58credits hours)							
第一學年First Year							
微積分(一)	Calculus (I)	3	3	0			
物理(一)	Physics (I)	3	3	0			
計算機程式	Computer Program	2	1	2			
電工學及實習	Electrical Engineering and Practice				3	2	2
電腦輔助繪圖	Computer Aided Drawing				3	3	0
微積分(二)	Calculus (II)				3	3	0
第二學年Second Year							
工程數學(一)	Engineering Mathematics (I)	3	3	0			
電機應用及實習	Electric Application and Practice	3	2	2			
熱力學	Thermodynamics	3	3	0			
應用電子及實習	Applied Electronics and Practice	3	2	2			
電路學	Electric Circuits				3	3	0
冷凍空調原理	Principles of Refrigeration and Air-Conditioning				3	3	0
流體力學與流體機械	Fluid Mechanics and Fluid Machinery				3	3	0
第三學年Third Year							
冷凍工程及實習	Refrigeration Engineering Practice	3	2	2			
空調工程及實習	Air-Conditioning Engineering and Practices	3	2	2			
冷凍空調設計及實習	HVAC System Design and Practice				3	2	2
冷凍空調節能技術及實習	Energy Saving Techniques and Practices for HVAC and R				3	2	2
能源工程原理及實習	Energy Engineering Principle and Practices				3	2	2
第四學年Fourth Year							
工業安全	Industry Safety	2	2	0			
節能服務技術	Energy Service Technology	3	3	0			
專業選修科目Department Electives Courses							
第二學年Second Year							
配電設計	Design of Power Distribution	3	3	0			
低溫工程	Cryogenic Engineering				3	3	0
△PLC應用及實習	PLC Application and Practice				3	2	2

冷凍空調裝修實務	Installation and Maintenance Practices of HVAC and R					3	3	0									
物理(二)	Physics (II)					3	3	0									
能源與環境概論	Introduction to Energy and Environment					3	3	0									
工程數學(二)	Engineering Mathematics(II)					3	3	0									
第三學年Third Year																	
流體機械	Fluid Machinery	3	3	0													
變頻節能控制	Frequency Conversion Energy Conservation Control	3	3	0													
現代控制	Modern Control	3	3	0													
工程倫理	Ethics in Engineering	2	2	0													
儲冰式空調	Ice Storage Air Conditioning	3	3	0													
冷凍冷藏應用技術	Freezing and Refrigeration Application Technology											3	3	0			
自動控制	Automatic Control											3	3	0			
冷凍系統設計	Refrigeration System Design											3	3	0			
第四學年Fourth Year																	
通風工程	Ventilation and Air Moving Engineering	3	3	0													
特殊空調	Distinctive Air-Conditioning	3	3	0													
工業管理	Industrial Management	3	3	0													
線性電路	Linear Circuits	3	3	0													
風力發電	Wind Power	3	3	0													
綠建築與照明節能	Energy Saving of Green Building and Lighting												3	3	0		
冷凍空調工程規劃及管理	Refrigeration and Air Conditioning Project Planning and Management												3	3	0		
組織行為與管理	Organizational Behavior and Management												3	3	0		
無塵室技術	Cleanroom Technology												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													
外語菁英課程	Foreign Language Elite Courses	6	6	0													
外語菁英課程	Foreign Language Elite Courses											6	6	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													
外語菁英課程	Foreign Language Elite Courses	6	6	0													
外語菁英課程	Foreign Language Elite Courses											6	6	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																	
體育選修	Physical Education Elective	1	2	0													
全民國防教育軍事訓練(五)	All-Out Defense Education Military Training (V)	1	2	0													
外語菁英課程	Foreign Language Elite Courses	6	6	0													
外語菁英課程	Foreign Language Elite Courses											6	6	0			
體育選修	Physical Education Elective											1	2	0			
第四學年Fourth Year																	
體育選修	Physical Education Elective	1	2	0													
外語菁英課程	Foreign Language Elite Courses	6	6	0													
外語菁英課程	Foreign Language Elite Courses											6	6	0			
體育選修	Physical Education Elective											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		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	學分 Credit	學時 Hour	
必修科目學分/時數 Required Courses Credit / Hour	14	17	15	18	16	20	13	15	10	14	13	16	5	5	0	0	
最低選修科目學分/時數 Minimum Electives Courses Credit / Hour	0	0	0	0	0	0	6	6	9	9	6	6	12	12	9	9	
總學分數/時數累計 Credits / Hours Total	14	17	15	18	16	20	19	21	19	23	19	22	17	17	9	9	

備註Note:

- 一、 畢業至少應修滿 128 學分【必修 86 學分，選修至少 42 學分(其中至少需含本系專業選修 30 學分)】。  
Students should complete at least 128 credits before graduation, including 86 required credits, 42 elective credits (elective credits should have at least 30 credits from department elective courses).
- 二、 博雅通識課程三大領域中，應修習二門不同領域課程，學分總計至少4學分。  
Among the 3 core areas of liberal education curriculum, students should take 4 or more credits in 2 different areas.
- 三、 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.
- 四、 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.
- 五、 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.
- 六、 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.