

國立勤益科技大學 113 學年度進修部四年制產攜 2.0 - 產學訓模式
電機工程系機電控制專班

National Chin-Yi University of Technology Continuing Education Division
Curriculum for 2024 Department of Electrical Engineering Four-Year Bachelor Program of Electrical Engineering

112.11.02.系課程會議通過
112.11.08.系務會議通過
112.11.22院課程委員會會議審議通過
112.12.07.校課程委員會會議及112.12.21.臨時教務會議審議通過
113.12.05.校課程委員會會議及113.12.24.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							
微積分(一)	Calculus (I)	3	3	0			
應用國文(一)	Applied Chinese (I)	2	2	0			
體育(一)	Physical Education (I)	0	2	0			
微積分(二)	Calculus (II)				3	3	0
應用國文(二)	Applied Chinese (II)				2	2	0
體育(二)	Physical Education (II)				0	2	0
第二學年Second Year							
實用英文(一)	Practical English (I)	3	3	0			
體育(三)	Physical Education (III)	0	2	0			
就業技巧與職場核心能力	Employment, Workplace Skills and Core Competencies				2	2	0
實用英文(二)	Practical English (II)				3	3	0
體育(四)	Physical Education (IV)				0	2	0
第三學年Third Year							
英文閱讀	English Reading	3	3	0			
英文聽講	English Listening and Speaking				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
專業必修科目(73學分)Department Required Courses(73credits hours)							
第一學年First Year							
*計算機概論	Introduction to Computer	3	3	0			
*電子學(一)	Electronics (I)	3	3	0			
*電子實習(一)	Electronics Practice (I)	1	0	3			
*工業配電設計	Industrial Power Distribution Design	3	3	0			
*工業配電設計實習	Industrial Power Distribution Design Practice	1	0	3			
電路學(一)	Electric Circuit Analysis (I)	3	3	0			
能源概論	Introduction to Energy	3	3	0			
*邏輯設計	Logic Design				3	3	0
*電子學(二)	Electronics (II)				3	3	0
*電子實習(二)	Electronics Practice (II)				1	0	3
電路學(二)	Electric Circuit Analysis (II)				3	3	0
控制概論	Introduction to Control				3	3	0
第二學年Second Year							
工程數學	Engineering Mathematics	3	3	0			
△計算機程式	Computer Programming	3	3	0			
△計算機程式實習	Computer Programming Practice	1	0	3			
產業實務實習(一)	Industrial Practice Internship (I)	3	0	6			
電機機械	Electric Machinery				3	3	0
產業實務實習(二)	Industrial Practice Internship (II)				3	0	6
第三學年Third Year							
△微處理機及實習	Microprocessor and Practice	3	2	2			
自動控制	Automatic Control	3	3	0			
電機機械實習	Electric Machinery Practice	1	0	3			
產業實務實習(三)	Industrial Practice Internship (III)	3	0	6			
電力電子學	Power Electronics				3	3	0
電機控制	Electric Drive Control				3	3	0
產業實務實習(四)	Industrial Practice Internship (IV)				3	0	6
第四學年Fourth Year							
電力電子學實習	Power Electronics Practice	1	0	3			
電機控制實習	Electric Drive Control Practice	1	0	3			
產業實務實習(五)	Industrial Practice Internship (V)	3	0	6			
產業實務實習(六)	Industrial Practice Internship (VI)				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							
*油氣壓應用	Hydraulic and Pneumatic Application	3	3	0			
普通物理(一)	Physics (I)	3	3	0			
*△PLC應用設計與實習	PLC Application Design and Practice				2	1	
*電機概論	Introduction to Electric Machinery				2	2	
*線性IC應用及實習	Linear IC Application and Practice				3	2	
普通物理(二)	Physics (II)				3	3	
第二學年 Second Year							
數位電路晶片設計及實習	Digital Circuit Chip Design and Practice	3	4	0			
RFID應用	RFID Application	3	3	0			
能源應用	Energy Application	3	3	0			
電力品質	Power Quality	3	3	0			
線性代數	Linear Algebra	3	3	0			
感測原理	Principle of Sensors	3	3	0			
高階可程式控制器應用	Advanced Programmable Logic Controller Applications	0	0	0			
用電設備檢驗與維護	Electrical Equipment Inspection and Maintenance				3	3	
光電概論	Introduction to Optoelectronic				3	3	
工廠管理	Factory Management				3	3	
第三學年 Third Year							
信號與系統	Signals and Systems	3	3	0			
△圖控程式設計及實習	Graphical Programming and Practice	3	2	2			
電腦輔助電機設計及實習	Computer Aided Design and Practice of Electrical Machinery	3	2	2			
感測器應用及實習	Sensors Application and Practice	3	2	2			
氣壓工程	Pneumatic Engineering	3	3	0			
電腦網路技術	Computer Network Technology				3	3	
△數位信號處理及實習	Digital Signal Processing and Practice				3	2	
專業軟體應用及實習	Professional Software Application and Practice				3	2	
網路分析	Network Analysis				3	3	
工業安全衛生	Industrial Safety Hygiene				3	3	
物聯網電子系統應用與設計	IoT Electronic Systems Application and Design				3	3	
電力工程	Power Engineering				3	3	
消防工程	Fire Protection Engineering				3	3	
△MATLAB程式設計及實習	MATLAB Programming and Practice				3	2	
第四學年 Fourth Year							
控制系統實務	Control System Practice	3	2	2			
系統動態模擬及實習	System Dynamic Simulation and Practice	3	2	2			
電腦輔助繪圖設計及實習	Computer Aided Drafting Design and Practice	3	2	2			
人工智慧概論	Introduction to Artificial Intelligence	3	3	0			
△機電整合及實習	Mechatronics and Practice				3	2	
電機設備保護及實習	Electrical Equipment Protection and Practice				3	2	
切換式電源轉換器設計	Switching Power Supply Converter Design				3	3	
驅動器設計技術	Drivers Design Technology				3	3	
太陽能工程與實習	Solar Energy Engineering and Practice				3	2	
監控系統設計及實習	SCADA System Design and Practice				3	2	
風力發電工程	Wind Power Generation Engineering				3	3	
影像處理	Image Processing				3	3	
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
共同專業選修 General Department Electives 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	
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	
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			
體育選修	Physical Education Elective	1	2	0			
第四學年 Fourth Year							
檢定英文	English Test	3	3	0			

個人行銷與形象管理	Individual Marketing and Image Management								3	3	0					
終身學習與生涯規劃	Lifelong Learning and Career Planning								2	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	22	28	18	22	13	20	11	16	13	19	12	15	5	12	5	12
最低選修科目學分/時數 Minimum Electives Courses Credit / Hour	3	3	7	9	3	3	6	6	3	3	6	6	3	3	3	3
總學分數/時數累計 Credits / Hours Total	25	31	25	31	16	23	17	22	16	22	18	21	8	15	8	15

備註Note:

- 一、 畢業至少應修滿 129 學分【必修 97 學分，選修至少 32 學分(其中至少需含本系專業選修 22 學分)】。
Students should complete at least 129 credits before graduation, including 97 required credits, 32 elective credits (elective credits should have at least 22 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、 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、 本系畢業門檻：
Graduation Requirements of Our Department:
(1)本專班輔導之乙級技術士證照為工業配線乙級、數位電子乙級。
(1)The second-class technical licenses covered by the counseling of this specialized class are Industrial Wiring Class B and Digital Electronic Class B.
(2)同時完成所需修習學分與至少取得一張上述乙級技術士技能證照，或系所規定之核心證照，始可畢業。
(2)To graduate, one must simultaneously complete the required credits and obtain at least one of those mentioned above second-class technical licenses or the core licenses specified by the department.
- 五、 產大學生候選選手資格，培訓期間可抵當學期產業實務實習，學期成績由培訓中心訓練教師及本系輔導教師共同評分。
Students can be exempted from the "Industrial Practice Internship" course in the current semester if they are eligible to be players. The course score will be jointly graded by the training instructors from the training center and the counseling instructors from our department.
- 六、 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.
- 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、 第一學年必須選讀*職訓中心基礎訓練課程28學分。
- 九、 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.