

國立勤益科技大學 113 學年度 電子工程系 碩士班學分計畫表
National Chin-Yi University of Technology
Curriculum Planning of 2024 Master's Degree in Department of Electronic Engineering

112.11.13 系課程委員會會議審議通過及
112.11.22 院課程委員會審議通過
112.12.07 校課程委員會議及 112.12.21 臨時教務會議審議通過
113.12.5 校課程委員會議及 113.12.24 臨時教務會議審議修訂通過

科目	Subjects	上學期		下學期	
		First Semester		Second Semester	
		學分 Credits	學時 Hour	學分 Credits	學時 Hour
必修科目(10 學分) Required Courses (10 credits hours)					
第一學年 First Year					
專題討論(一)	Seminar (I)	1	2		
專題討論(二)	Seminar (II)			1	2
第二學年Second Year					
專題討論(三)	Seminar (III)	1	2		
專題討論(四)	Seminar (IV)			1	2
論文	Thesis	3	3	3	3
專業選修科目 Department Required Courses					
第一學年 First Year					
積體電路領域 IC Design and Application					
先進半導體元件與可靠度	Advanced Semiconductor Devices and Reliability	3	3		
奈米元件製程技術	Process and Technology of Nano Devices	3	3		
積體電路分析與設計	Integrated Circuit Analysis and Design	3	3		
積體電路實現專論	Practice of IC Realization	3	3		
半導體元件物理	Physics of Semiconductor Devices			3	3
半導體量測	Semiconductor Measurement			3	3
材料與應用	Material and Application			3	3
數位 IC 設計	Digital IC Design			3	3
類比 IC 設計	Analog IC Design			3	3
網路多媒體領域 Multimedia and Game Machine Design					
高等電腦圖學	Advanced Computer Graphics	3	3		
光電量測	Electro-Optical Measurements	3	3		
多媒體壓縮	Multimedia Compression	3	3		
嵌入式影像處理專論	Image Processing on Embedded System	3	3		
嵌入式系統開發整合實務	Embedded System Development and Integration Practice	3	3		
背景音樂設計	Design of Background Music	3	3		
工業有線通訊技術	Industrial Wired Communication Technology	3	3		
工業無線通訊技術	Industrial Wireless Communication Technology			3	3
光電系統	Electro-Optical System			3	3
感測聯網系統實務	Sensor Networks System Practice			3	3
電腦視覺專論	Special Topics of Computer Vision			3	3
即時著色	Real-time Rendering			3	3
背景音樂設計實務	Design and Practice of Background Music			3	3
語音處理	Speech Processing			3	3
智慧機器人領域 Intelligent Robotics					
※智慧型機器人系統應用專題	Application Project of Intelligent Robotic System	3	3		
智慧機器人學	Intelligent Robotics	3	3		
智慧型控制	Intelligent Control	3	3		
嵌入式系統開發整合實務	Embedded System Development and Integration Practice	3	3		
機器人機構與系統設計	Robot Mechanism and System Design	3	3		
智慧感測與監控系統	Smart Sensor and Supervisory Control System			3	3
自動化光電檢測	Automated Optical and Electrical Inspection			3	3
物聯網資訊安全技術	IoT Information Security Technology			3	3
一般專業 General Electronics Discipline					
科技英文閱讀	Technical English Reading	3	3		
影像辨識	Image Recognition	3	3		
電力電子學之電腦輔助設計	Computer-aided Design of Power Electronics	3	3		
*風能理論與案例分析	Wind Energy Theory and Case Studies Analysis	3	3		
工業 4.0 網路實務	Industry 4.0 Network Practice	3	3		
*JAVA 企業應用	Java Enterprise Application	3	3		
*電池管理系統	Battery Management System			3	3
感測與監控	Sensor and Supervisory Control			3	3
工業通訊技術	Industrial Communication Technology			3	3
*數位影像處理	Digital Image Processing			3	3
科技英文寫作	Technical English Writing			3	3
巨量資料分析	Big Data Analysis			3	3
電力轉換器分析與設計	Analysis and Design of Power Converters			3	3
第二學年 Second Year					
積體電路領域 IC Design and Application					

SoC 導論	Introduction to SoC Design	3	3		
半導體生醫感測器製作與應用	Fabrication and Application of Biosensor Devices	3	3		
進階類比 IC 設計	Advanced Analog IC Design	3	3		
電子醫療器材法規實務	Electronic Medical Device Regulations and Practice	3	3		
應用晶片整合實務	Practice of ASIC Integration	3	3		
先進元件技術	Advanced Devices Technology				
量子力學	Quantum Mechanics			3	3
電源 IC	Power IC Design Essentials			3	3
網路多媒體領域 Multimedia and Game Machine Design					
多媒體通訊	Multimedia Communication	3	3		
著色語言專論	Shading Language	3	3		
統計應用專論	Applied Statistics	3	3		
生醫感測系統實務	Biomedical Sensing System and Practice	3	3		
遊戲數學	Mathematics for Games			3	3
遊戲物理	Physics Simulation in Computer Games			3	3
幾何建模專論	Geometric Modeling			3	3
虛擬實境研究與開發	Virtual Reality Research and Development			3	3
智慧機器人領域 Intelligent Robotics					
工業機器人系統與應用	Industrial Robot System and Application	3	3		
智慧機電系統	Smart Mechatronics System	3	3		
自動化薄膜設備與原理	Automatic Film Equipment and Principle	3	3		
互動機器人設計與應用	Robots for Interaction Design and Service Application			3	3
工業無線通訊技術	Industrial Wireless Communication Technology			3	3
一般專業 General Electronics Discipline					
高科技專案管理	High Tech Project Management	3	3		
雲端計算與服務	Cloud Computing and Services	3	3		
數位電源設計	Digital Power Design	3	3		
*高等控制工程	Advanced Control Engineering	3	3		
高頻電路設計	RF Circuit Design	3	3		
*自動機原理	Theory of Automata	3	3		
*生醫電子與訊號處理應用	Biomedical Electronics and Signal Processing Application			3	3
電力電子技術與實務	Power Electronics Technology and Practice			3	3
實用天線設計	Practical Antenna Design			3	3
*機器學習	Machine Learning			3	3
高科技製造與管理	High Tech Manufacturing and Management			3	3
智慧型設備通訊	Smart Device Communication			3	3
企業實習	Industrial Skill Practice			3	3

備註 Note：

- 畢業至少應修 34 學分：必修 10 學分(含論文 6 學分、專題討論 4 學分)，選修 24 學分(專業選修至少 18 學分)。

Students should complete at least 34 credits before graduation including 10 required credits (containing six credits for thesis and four credits for seminar) and 24 elective credits (at least 18 professional elective credits).

- 學生應於申請學位考試前至「教育部臺灣學術倫理教育資源中心」網路平臺完成學術研究倫理教育課程，至少 6 小時課程。

Students need to complete the academic research ethics education course for at least 6 hours before the final defence application.

- 學生畢業前應修讀至少一門「科技英文閱讀、科技英文寫作、或科技英文」等英文強化課程，採計為畢業選修學分。外籍生得不受此限。

All graduate students are required to take at least one of the following courses to enhance English language ability. The course credits can be included in the required credited for graduation. The above regulation does not apply to international students.

Selected courses are as follows:

- Technical English Reading
- Technical English Writing
- English for Science and Technology, etc.

- 研究生必須通過碩士班論文口試，方准予畢業。畢業時，依法授予工學碩士學位。

The master thesis must be passed by oral defense. Master degree will be conferred in the engineering discipline.

- 課程名稱加註「*」為經學院所屬系課程委員會審議通過之全英文課程，凡院所屬外籍學生皆可選讀，修習及格可認定為所屬系之專業選修課程。

The courses marked with an asterisk (*) are lectured in English-only. International students in the College of Engineering are allowed to choose these courses. Once the students pass the course, the credits can be counted as professional elective credits.

- 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.