國立勤益科技大學 112 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 2023 Master's Degree in Department of Electronic Engineering

科目	Subjects	上學期 First Semester		下學期 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					
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		
奈米元件製程技術	Fabrication and Techniques of Nano Devices	3	3		
數位 IC 設計	Digital IC Design			3	3
類比 IC 設計	Analog IC Design			3	3
半導體量測	Semiconductor Measurement			3	3
半導體元件物理	Physics of Semiconductor Devices			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 Systems	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 Techniques	3	3		
工業無線通訊技術	Industrial Wireless Communication Techniques			3	3
光電系統	Electro-Optical Systems			3	3
感測聯網系統實務	Sensor Networks System Practice			3	3
電腦視覺專論	Computer Vision			3	3
即時著色	Real-time Rendering			3	3
背景音樂的設計與實務	Design and Practice of Background Music			3	3
語音處理	Speech Processing			3	3
通信領域 Communication Systems					
波導理論	Theory of Guided Wave	3	3		
光纖波導	Fiber Optic Waveguide	3	3		
通訊系統晶片及電路設計	IC and Circuit Design for Communication Systems	3	3		
光纖通訊	Fiber Optic Communication Systems	3	3		
數位電視	Digital Television	3	3		
微波工程	Microwave Engineering			3	3
光纖感測	Fiber Optic Sensors			3	3
錯誤更正碼	Error Correction Codes			3	3
RFID 專論	Study on RFID			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		
高等模糊控制	Advanced Fuzzy 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
機器人定位導航	Robotic Positioning and Navigation			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 Technique			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	SoC Design Overview	3	3		
進階類比 IC 設計	Advanced Analog IC Design	3	3		
應用晶片整合實務	ASIC Practical Integration	3	3		
半導體生醫感測器製作與應用	Fabrication and Applications of Biosensor Devices	3	3		
量子力學	Quantum Mechanics			3	3
先進元件技術	Advanced Devices Technology			3	3
電源 IC	Power Integrated Circuit Design			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		
幾何建模專論	Geometric Modeling			3	3
遊戲數學	Mathematics for Games			3	3
遊戲物理	Physics Simulation in Computer Games			3	3
通信領域 Communication Systems					
電磁專題	Advanced Electromagnetics	3	3		
無線通訊產品之設計與開發實務	The Design of the Wireless Communication Products and Development Practice	3	3		
天線專題	Special topics of Antenna Theory			3	3
無線通訊產品之設計與產銷實務	The Design of the Wireless Communication Products and Marketing Practice			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		
機器人作業系統	Robot Operation System	3	3		
互動機器人設計與應用	Robots for Interaction Design and Service Application			3	3
機器視覺	Machine Vision			3	3
工業 4.0 通訊技術與應用	Industry 4.0 Communication Technology and Applications			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	Automata Theory	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：

1. 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).

2. 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.

3. 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.

4. 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.

5. 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.