

國立勤益科技大學 114 學年度電機工程系碩士班學分計畫表  
Curriculum Planning of 2025 Master' s Degree in Department of Electrical Engineering

113.10.09.系課程會議審議通過  
113.10.23.系務會議議通過  
113.11.20.院課程會議審議通過  
113.12.5.校課程委員會議及 113.12.24.臨時教務會議審議通過

科目	Subjects	上學期 Fall Semester		下學期 Spring Semester	
		學分 Credits	學時 Hour	學分 Credits	學時 Hour
必修科目(10 學分) Required Courses (10credits hours)					
第一學年 First Year					
專題研討 (一)	Seminar ( I )	1	2		
專題研討 (二)	Seminar ( II )			1	2
第二學年 Second Year					
專題研討 (三)	Seminar ( III )	1	2		
專題研討 (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					
共同選修科目 General Elective Courses					
科技英文	English for Science and Technology	3	3		
系統理論	System Theory	3	3		
模糊控制	Fuzzy Control	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		
*即時著色	Real-Time Rendering	3	3		
*JAVA 企業應用	Java Enterprise Application	3	3		
*智慧感測與行動計算	Smart Sensing and Mobile Computing	3	3		
*SLAM 同步定位與製圖	Simultaneous Location and Mapping	3	3		
高等電機理論	Advanced Electric Machinery Theory			3	3
類神經網路應用	Neural Network and Application			3	3
英文論文寫作	English Thesis Writing			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
*高等同步定位與製圖	Advanced Simultaneous Location and Mapping			3	3
*進階電腦網路	Advanced Computer Network			3	3
電能科技組選修科目 Power & Energy Technology Field Elective Courses					
永磁無刷馬達	Permanent Brushless Magnet Motor	3	3		
電力品質專論	Advanced Topics in Power Quality	3	3		
高等電力電子學	Advanced Power Electronics	3	3		
太陽光電發電系統設計	Photovoltaic Power Generation Systems Design	3	3		
*高等人工智慧	Artificial Intelligence	3	3		
可拓理論	Extension Theory			3	3
先進電能儲存技術	Advanced Energy Storage Technology			3	3
*氫能與燃料電池技術	Hydrogen and Fuel Cell Technology			3	3
電力系統分析與控制	Power System Analysis and Control			3	3
電磁干擾與防治	Electromagnetic Interference and Protection	3	3		
電力電子元件	Power Electronics Element			3	3
電力交易平台	Electricity Trading Platform			3	3
高效電能轉換	Efficient Power Conversion			3	3
機電控制組選修科目 Mechanical & Electrical Control Field Elective Courses					
高等控制專論	Advanced Topics in Control System	3	3		
高等控制系統	Advanced Control System	3	3		
高等數位信號處理	Advanced Digital Signal Processing	3	3		
*高等數位影像處理	Advanced Digital Image Processing	3	3		
*高等系統動態模擬	Advanced System Dynamic Simulation	3	3		
數位控制	Digital Control			3	3
高等電機控制	Advanced Electric Drive Control			3	3
語音信號處理	Speech Signal Processing			3	3
類小腦神經網路應用	CMAC Neural Network Application			3	3
嵌入式作業系統設計	Embedded Operating System Design			3	3
非線性系統與控制	Nonlinear System and Control			3	3
FPGA 於控制器設計	FPGA-Based Controller Design			3	3
智慧電網	Smart Grid			3	3
智慧型機器視覺系統應用專題	Intelligent Machine Vision System Application Project			3	4
深度學習實務應用	Deep Learning Application			3	3

電機驅動器設計實務	Electric Drive Design Practice			3	3
第二學年 Second Year					
共同選修科目 General Elective Courses					
*數位 IC 設計	Digital IC Design	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
電能科技組選修科目 Power & Energy Technology Field Elective Courses					
*電池管理系統	Battery Management System	3	3		
高等實驗設計	Advanced Design of Experiments	3	3		
電力系統穩定度	Power System Stability	3	3		
*局部放電檢測技術	Partial Discharge Detection Technology	3	3		
分散式發電系統動態分析	Dynamic Analysis of Distributed Power Generation System			3	3
*新暨再生能源發電效益評估	Appraisal Criteria for New and Renewable Energy Power Generation			3	3
機電控制組選修科目 Mechanical & Electrical Control Field Elective Courses					
適應控制	Adaptive Control	3	3		
小波轉換及應用	Wavelet Transform and Application	3	3		
DSP 於驅動器應用專論	Advanced Topics in DSP Drivers	3	3		
高科技專利取得與攻防	High Technology Patent Application and Protection	3	3		
高等控制工程	Advanced Control Engineering	3	3		
*交換式電源轉換器	Switching Power Converter	3	3		
資料分析實務	Data Analysis Practice			3	3
最佳控制	Optimization Control			3	3
強健控制理論及應用	Robust Control Theory and Application			3	3
切換式電源供應器設計	Switching Power Supply Design			3	3
智慧整合感控系統	Intelligent Cyber-Physical System			3	3
智慧型軌道運輸系統	Intelligent Rail Transportation System			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(系內專業選修不得低於 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 defense application.
- 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。  
In order to meet graduation requirements, graduate students must complete thesis oral defense for the Master of Science in engineering degree.
- 實際開課狀況需依當學期、依各科目授課進度與老師可配合授課情形安排，本系歷年開課，請至本校「校務行政網路系統-學生篇」查詢。  
The actual commencement of classes will be arranged based on the current semester situation, the progress of each subject's curriculum, and the availability of teachers for instruction. Information about courses offered in previous years for this department can be found by checking the 'Student Information Management System' on our school's website.
- 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。  
Courses with an asterisk (\*) in their titles have been reviewed and approved by the Course Committee of the college as fully English-taught courses. These courses are open to all international students affiliated with the college, and successful completion will be recognized as fulfilling the requirements for professional elective courses within their respective departments.
- 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.