

國立勤益科技大學 107 學年度電機工程系研究所碩士班學分計畫表
Curriculum Planning of 2018 Master' s Degree in Department of Electrical Engineering

107.4.30.系課程委員會會議及 107.05.03.系務會議審議通過
107年5月15日院課程委員會會議審議通過
107.5.29.校課程委員會會議及 107.6.14.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 | Papers | 3 | 3 | 3 | 3 |
| 專業選修科目 Department Electives 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 | Linear 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 | | |
| 高等電機理論 | Advanced Electric Machinery | | | 3 | 3 |
| 類神經網路 | Neural Network | | | 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 |
| 電能科技組選修科目 Power & Energy Technology Field Elective Courses | | | | | |
| 永磁無刷馬達 | Brushless Permanent Magnet Motor | 3 | 3 | | |
| 電力品質專論 | Professional Discussion on Electric 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 | Practicality of photovoltaic power generation systems | 3 | 3 | | |
| 可拓方法 | Extension Theory | | | 3 | 3 |
| 最佳化方法 | Optimization | | | 3 | 3 |
| 先進電能儲存技術 | Advanced Energy Storage technologies | | | 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 | Electric Power Systems Analysis and Control | | | 3 | 3 |
| 機電控制組選修科目 Mechanical & Electrical Control Field Elective Courses | | | | | |
| 高等控制專論 | Advanced Control Seminar | 3 | 3 | | |
| 高等控制系統 | Advanced Control Systems | 3 | 3 | | |
| 積體電路元件 | Device Electronics for Integrated Circuit | 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 Dynamic System Simulation | 3 | 3 | | |
| 數位控制 | Digital Control | | | 3 | 3 |
| 高等電機控制 | Advanced Electrical Drives | | | 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 applications | | | 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 Micro-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 visual machine system application project | | | 3 | 4 |
| 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 | | | | | |

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|--|--|---|---|---|---|
| 電池管理系統 | Battery Management System | 3 | 3 | | |
| 高等實驗設計 | Advanced Experiment Design | 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 Techniques | 3 | 3 | | |
| 切換式電源轉換器 | Switching Power Converter | | | 3 | 3 |
| 分散式發電系統動態分析 | Dynamic Analysis of Distributed 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 | | |
| 晶片設計 | System Chip SOC Design | 3 | 3 | | |
| 適應性信號處理 | Adaptive Signal Processing | 3 | 3 | | |
| 小波轉換及應用 | Wavelet Transform and Application | 3 | 3 | | |
| DSP 於驅動器應用專論 | Professional Discussion on DSP in Driver Applications | 3 | 3 | | |
| 高科技專利取得與攻防 | High Tech Patent Application & Protection | 3 | 3 | | |
| 高等控制工程 | Advanced Control Engineering | 3 | 3 | | |
| Python 程式設計 | Python Programming | | | 3 | 3 |
| 光纖通信網 | Fiber Optics Communication Network | | | 3 | 3 |
| 最佳控制 | Optimal Controls | | | 3 | 3 |
| 數位內容專論 | Professional Discussion on Digital Contents | | | 3 | 3 |
| 強健控制理論及應用 | Application and Theory of Robust Control | | | 3 | 3 |
| 切換式電源供應器設計 | Analysis and Design of Switching Power Supply | | | 3 | 3 |
| 智慧整合感控系統 | Theory and Practice for Cyber-Physical Systems | | | 3 | 3 |
| 智慧型軌道運輸系統 | Railway Intelligent Transportation System | | | 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 24 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 24 professional elective credits).
2. 學生於畢業前須修過「學術研究倫理教育課程」必修 0 學分(6 小時)課程。
Each student should complete Academic Research Ethics Education Course which is a six-hour required course with 0 credit before graduation.
3. 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.
4. 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.