# 萬能科技大學 112學年度 電資研究所 碩士班 課程規劃表

**Curriculum for Master's Degree in Graduate Institute of Electrical Engineering and Computer Science, Vanung University**

**Academic Year 2023**

| 學年Academic Year | 一 | | 二 | | | |
|---|---|---|---|---|---|---|
| 學期Semester | 上 | 下 | 上 | 下 | 專業必修學分Professional Compulsory Credits | 4 |
| 每學期最高學分限制Maximum credit limit per semester | 15 | 15 | 15 | 15 | 最低選修學分Minimum Professioanl Elective Credits | 20 |
| 每學期最低學分限制Minimum credit limit per semester | 1 | 1 | 1 | 1 | 畢業應修最低學分 Minimum Credits Requirement for Graduation | 24 |

**註 Note：**

1. 畢業應修最低學分24學分。The minimum credits required for graduation are 24 credits.
2. 本碩士班未開設之課程可至外系所選修，但課程需與本所相關。並於選課前提出申請，且經所長核准後，始得列入畢業學分。惟畢業學分內最多含6學分外系所課程。碩士論文學分另計。Courses not offered in this master's program can be taken in external departments, but the courses must be related to this institute. And submit an application before course selection, and only after being approved by the director can it be included in the graduation credits. However, the graduation credits include at most 6 credits of courses from other departments. 6 credits for master's thesis.
3. 本碩士班研究生每學期修課不得超過15學分。Graduate students of this master's program must take no more than 15 credits per semester.

1111013系課程會議、1111026系務會議通過。 Approvalled by 1111013 department course meeting and 1111026 department affairs meeting.

| 學年Academic Year 課程架構 Course | 第一學年The First Academic Year | | | | | 第二學年The Second Academic Year | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 科 目 Subject | 第一學期 | | 第二學期 | | 科 目 Subject | 第一學期 | | 第二學期 | |
| | | 學分 Credits | 時數 Hours | 學分 Credits | 時數 Hours | | 學分 Credits | 時數 Hours | 學分 Credits | 時數 Hours |
| 專業基礎必修課程 Required Professional Course of Department | 專題討論(一) Seminar (I) | 2 | 2 | | | | | | | |
| | 專題討論(二) Seminar (II) | | | 2 | 2 | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | **小計 Subtotal** | **2** | **2** | **2** | **2** | **小計 Subtotal** | **0** | **0** | **0** | **0** |
| 專業選修課程 Professional Department Eelective Courses | 數位信號處理 Digital Signal Process | 3 | 3 | | | 物聯網應用實務 Application and Practice for Internet of Thing | 3 | 3 | | |
| | 高等演算法 Advanced Algorithms | 3 | 3 | | | 高等資料庫系統 Advanced Database Systems | 3 | 3 | | |
| | 人工智慧 Artificial Intelligence | 3 | 3 | | | 軟體工程 Software Engineering | 3 | 3 | | |
| | 機器學習 Machine Learning | 3 | 3 | | | 資料探戡 Data Mining | 3 | 3 | | |
| | 高等計算機網路 Advanced Computer Network | 3 | 3 | | | 自主性機器人 Autonomous Robot | 2 | 3 | | |
| | 資訊安全實務 Practices of Information Security | 3 | 3 | | | 巨資料分析 Big Data Analysis | | | 2 | 3 |
| | 高等雲端程式設計 Programming for Clouding | 2 | 3 | | | 行動計算 Mobile computing | | | 3 | 3 |
| | Python/R資料處理 Data Access using Python or R | 2 | 3 | | | 類神經網路與應用 Neural Networks | | | 2 | 3 |
| | 感測器融合 Sensor Fusion | 2 | 3 | | | 量子電腦與量子計算 Quantum Computers and Quantum Computation | | | 2 | 3 |
| | 區塊鏈與加密貨幣 Blockchain and Cryptocurrency | 2 | 3 | | | 資料視覺化 Data Visualization | | | 2 | 3 |
| | 深度學習 Deep Learning | | | 3 | 3 | | | | | |
| | 機器人學 Robotics | | | 2 | 3 | | | | | |
| | 高等影像處理 Advanced Image Processing | | | 3 | 3 | | | | | |
| | 大數據 Big Data | | | 3 | 3 | | | | | |
| | 無線通訊與網路 Wireless Communication Network | | | 3 | 3 | | | | | |
| | 網路安全實務 Netwrok Security Practices | | | 3 | 3 | | | | | |
| | 密碼學 Cryptography | | | 3 | 3 | | | | | |
| | 高等計算機結構 Advanced Computer Architectures | | | 2 | 3 | | | | | |
| | 圖形識別 Pattern Recognition | | | 2 | 3 | | | | | |
| | 強化學習 Reinforcement Learning | | | 2 | 3 | | | | | |
| | | | | | | | | | | |
| 總開課學分Total Credits | | | | | | | | | | |
| 24 | | | | | | | | | | |
| 總開課時數 Total Teaching Hours | 最低應選修學分 Minimum Elective Credits | **10** | **12** | **10** | **12** | 最低應選修學分 Minimum Elective Credits | **0** | **0** | **0** | **0** |
| 28 | 總計 Total | **12** | **14** | **12** | **14** | 總計 Total | **0** | **0** | **0** | **0** |