

國立勤益科技大學 113 學年度進修部四年制資訊工程系學分計畫表  
National Chin-Yi University of Technology Continuing Education Division Curriculum for 2024 Four-Year Bachelor Program  
of Computer Science and information Engineering

112.10.20 系課程會議審議通過

112.10.31 系務會議審議通過

112.11.22 院課程會議審議通過

112.12.07.校課程委員會會議及 112.12.21.臨時教務會議審議通過

| 科目   | Courses                                  | 上學期 First Semester |               |                  | 下學期 Second Semester |               |                  |
|--|--|--------------------|---------------|------------------|---------------------|---------------|------------------|
|  |  | 學分<br>Credits      | 正課<br>Lecture | 實習<br>Internship | 學分<br>Credits       | 正課<br>Lecture | 實習<br>Internship |
| 共同必修科目(28 學分) General Required Courses (28 credits hours)  |  |                    |               |                  |                     |               |                  |
| 第一學年First Year   |  |                    |               |                  |                     |               |                  |
| 國文(一)  | Chinese (I)                              | 3                  | 3             | 0                |                     |               |                  |
| 大一英文(一)  | Freshman English (I)                     | 2                  | 2             | 0                |                     |               |                  |
| 英文聽講(一)  | English Listening and Speaking (I)       | 1                  | 1             | 0                |                     |               |                  |
| 體育(一)  | Physical Education (I)                   | 0                  | 2             | 0                |                     |               |                  |
| 國文(二)  | Chinese (II)                             |                    |               |                  | 3                   | 3             | 0                |
| 大一英文(二)  | Freshman English (II)                    |                    |               |                  | 2                   | 2             | 0                |
| 英文聽講(二)  | English Listening and Speaking (II)      |                    |               |                  | 1                   | 1             | 0                |
| 體育(二)  | Physical Education(II)                   |                    |               |                  | 0                   | 2             | 0                |
| 第二學年Second Year  |  |                    |               |                  |                     |               |                  |
| 歷史與文化(一)   | History and Culture (I)                  | 2                  | 2             | 0                |                     |               |                  |
| 體育(三)  | Physical Education(III)                  | 0                  | 2             | 0                |                     |               |                  |
| 博雅通識課程   | Liberal Education                        | 2                  | 2             | 0                | 2                   | 2             | 0                |
| 歷史與文化(二)   | History and Culture (II)                 |                    |               |                  | 2                   | 2             | 0                |
| 體育(四)  | Physical Education(IV)                   |                    |               |                  | 0                   | 2             | 0                |
| 第三學年Third Year   |  |                    |               |                  |                     |               |                  |
| 藝術鑑賞(一)  | Art Appreciation (I)                     | 1                  | 1             | 0                |                     |               |                  |
| 憲法與民主(一)   | Constitution and Democracy (I)           | 2                  | 2             | 0                |                     |               |                  |
| 音樂鑑賞(一)  | Music Appreciation (I)                   | 1                  | 1             | 0                |                     |               |                  |
| 音樂鑑賞(二)  | Music Appreciation (II)                  |                    |               |                  | 1                   | 1             | 0                |
| 憲法與民主(二)   | Constitution and Democracy (II)          |                    |               |                  | 2                   | 2             | 0                |
| 藝術鑑賞(二)  | Art Appreciation (II)                    |                    |               |                  | 1                   | 1             | 0                |
| 第四學年Fourth Year (無必修課程No General Required Courses)         |  |                    |               |                  |                     |               |                  |
| 專業必修科目(60 學分) Department Required Courses(60credits hours) |  |                    |               |                  |                     |               |                  |
| 第一學年First Year   |  |                    |               |                  |                     |               |                  |
| 微積分 (一)  | Calculus (I)                             | 3                  | 3             | 0                |                     |               |                  |
| 計算機概論  | Introduction to Computer                 | 3                  | 3             | 0                |                     |               |                  |
| △數位邏輯概論  | Introduction to Digital Logic            | 3                  | 3             | 0                |                     |               |                  |
| △數位邏輯實務  | Digital Logic and Experiment             |                    |               |                  | 3                   | 3             | 0                |
| 微積分(二)   | Calculus (II)                            |                    |               |                  | 3                   | 3             | 0                |
| △程式設計與實習(一)  | Computer Programming and Experiment (I)  |                    |               |                  | 3                   | 2             | 2                |
| 電子電路   | Electronic Circuit Design and Practice   |                    |               |                  | 3                   | 3             | 0                |
| 第二學年Second Year  |  |                    |               |                  |                     |               |                  |
| 電腦網路概論   | Introduction to Computer Network         | 3                  | 3             | 0                |                     |               |                  |
| 工程數學(一)  | Engineering Mathematics (I)              | 3                  | 3             | 0                |                     |               |                  |
| △程式設計與實習(二)  | Computer Programming and Experiment (II) | 3                  | 2             | 2                |                     |               |                  |
| 線性代數   | Linear Algebra                           | 3                  | 3             | 0                |                     |               |                  |
| △資料結構  | Data Structures                          | 3                  | 3             | 0                |                     |               |                  |
| 工程數學(二)  | Engineering Mathematics (II)             |                    |               |                  | 3                   | 3             | 0                |
| 離散數學   | Discrete Mathematics                     |                    |               |                  | 3                   | 3             | 0                |
| 計算機組織與結構   | Computer Organization and Architecture   |                    |               |                  | 3                   | 3             | 0                |
| △演算法   | Algorithms                               |                    |               |                  | 3                   | 3             | 0                |
| 第三學年Third Year   |  |                    |               |                  |                     |               |                  |
| 機率   | Probability                              | 3                  | 3             | 0                |                     |               |                  |
| 專題製作(一)  | Independent Study (I)                    | 3                  | 2             | 2                |                     |               |                  |
| 專題製作(二)  | Independent Study (II)                   |                    |               |                  | 3                   | 2             | 2                |
| 作業系統   | Operating System                         |                    |               |                  | 3                   | 3             | 0                |
| 第四學年Fourth Year  |  |                    |               |                  |                     |               |                  |
| 科目   | Courses                                  | 上學期 First Semester |               |                  | 下學期 Second Semester |               |                  |
|  |  | 學分<br>Credits      | 正課<br>Lecture | 實習<br>Internship | 學分<br>Credits       | 正課<br>Lecture | 實習<br>Internship |
| 專業選修科目 Department Electives Courses                        |  |                    |               |                  |                     |               |                  |
| 第一學年 First Year  |  |                    |               |                  |                     |               |                  |
| 學程共同選修   |  |                    |               |                  |                     |               |                  |
| 專業證照輔導實務   | Professional License Counseling          | 3                  | 1             | 2                |                     |               |                  |
| 第二學年 Second Year   |  |                    |               |                  |                     |               |                  |
| 多媒體科技學群選修  |  |                    |               |                  |                     |               |                  |
| 數位影像處理導論   | Introduction to Digital Image Processing | 3                  | 3             | 0                |                     |               |                  |

|                         |   |   |   |   |   |   |   |
|-------------------------|---|---|---|---|---|---|---|
| 多媒體概論                   | Introduction to Multimedia                      | 3 | 3 | 0 |   |   |   |
| 生理工程導論                  | Introduction to Physiological Engineering       | 3 | 3 | 0 |   |   |   |
| 計算機圖學                   | Generalization of Computer Graphics             | 3 | 3 | 0 |   |   |   |
| 生醫訊號處理                  | Biomedical Signal Processing                    |   |   |   | 3 | 3 | 0 |
| 影像辨識                    | Advanced Image Recognition                      |   |   |   | 3 | 3 | 0 |
| 平面顯示技術                  | Flat Panel Display Technology                   |   |   |   | 3 | 3 | 0 |
| 多媒體編碼概論                 | Introduction to Multimedia Coding               |   |   |   | 3 | 3 | 0 |
| 網路協定分析                  | Internet Protocols Analysis                     |   |   |   | 3 | 3 | 0 |
| △Web 程式設計               | Web Programming                                 |   |   |   | 3 | 3 | 0 |
| <b>學程共同選修</b>           |   |   |   |   |   |   |   |
| △C 語言程式設計               | C Programming Language                          | 3 | 3 | 0 |   |   |   |
| 電腦軟體應用與設計               | Application and Design of Computer Software     | 3 | 3 | 0 |   |   |   |
| △C#程式語言                 | C# Programming Language                         |   |   |   | 3 | 3 | 0 |
| 網頁設計與網站管理               | Web Design and Website Management               |   |   |   | 3 | 3 | 0 |
| 訊號檢測與估值導論               | Introduction to Signal Detection and Estimation |   |   |   | 3 | 3 | 0 |
| 創意應用設計實務                | Innovation Application Design Practice          |   |   |   | 3 | 3 | 0 |
| <b>智慧型嵌入式技術學群選修</b>     |   |   |   |   |   |   |   |
| 智慧電子應用設計概論              | Introduction to Innovative Electronic Design    | 3 | 3 | 0 |   |   |   |
| 電腦視覺概論                  | Introduction to Computer Vision                 | 3 | 3 | 0 |   |   |   |
| △verilog 硬體描述語言         | Verilog Hardware Description Language           |   |   |   | 3 | 3 | 0 |
| 可編程矽智財設計                | IP Design                                       |   |   |   | 3 | 3 | 0 |
| 感測原理                    | Introduction Fundamentals of Sensors            |   |   |   | 3 | 3 | 0 |
| <b>第三學年 Third Year</b>  |   |   |   |   |   |   |   |
| <b>多媒體科技學群選修</b>        |   |   |   |   |   |   |   |
| 3D 電腦動畫                 | 3D Computer Animation                           | 3 | 3 | 0 |   |   |   |
| 電腦視覺實務                  | Implementation of Computer Vision               | 3 | 2 | 2 |   |   |   |
| 行動與無線通訊                 | Mobile and Wireless Communication               | 3 | 3 | 0 |   |   |   |
| 巨量資料處理概論                | Introduction to Big Data and its Processing     | 3 | 3 | 0 |   |   |   |
| 雲端運算概論                  | Introduction to Cloud Computing                 |   |   |   | 3 | 3 | 0 |
| 3D 電腦動畫實務               | 3D Computer Animation Practice                  |   |   |   | 3 | 2 | 2 |
| △遊戲程式設計                 | Introduction to the AS3 Game Programming Design |   |   |   | 3 | 3 | 0 |
| 巨量資料分析                  | Big Data Analytics                              |   |   |   | 3 | 3 | 0 |
| <b>學程共同選修</b>           |   |   |   |   |   |   |   |
| Linux 系統實務              | Practical Guide to Linux Administration         | 3 | 3 | 0 |   |   |   |
| 職場倫理論壇                  | Workplace Ethics Forum                          | 3 | 3 | 0 |   |   |   |
| 智慧生活科技概論                | Introduction to Smart Living Technologies       | 3 | 3 | 0 |   |   |   |
| 系統分析與設計實務               | System Analysis & Design                        | 3 | 3 | 0 |   |   |   |
| 系統性創新與應用                | Systematic Innovation and Application           | 3 | 3 | 0 |   |   |   |
| 色彩學概論                   | Chromatics introduction                         | 3 | 3 | 0 |   |   |   |
| △Scripting 程式語言         | Scripting Language                              | 3 | 3 | 0 |   |   |   |
| 數值分析                    | Numerical analysis                              |   |   |   | 3 | 3 | 0 |
| 職場倫理                    | Professional Ethics (and Career Management)     |   |   |   | 3 | 3 | 0 |
| 3D 列印技術                 | 3D Printing Technology                          |   |   |   | 3 | 3 | 0 |
| <b>智慧型嵌入式技術學群選修</b>     |   |   |   |   |   |   |   |
| 物聯網概論                   | Introduction to IOT                             | 3 | 3 | 0 |   |   |   |
| 介面技術                    | Interface Technology                            | 3 | 3 | 0 |   |   |   |
| 嵌入式系統概論                 | An Introduction to Embedded system              | 3 | 3 | 0 |   |   |   |
| 感測網路                    | Sensor Network                                  | 3 | 3 | 0 |   |   |   |
| 雲端應用實務                  | Practical Applications of Cloud Computing       |   |   |   | 3 | 2 | 2 |
| 物聯網控制實務                 | Internet of Things control                      |   |   |   | 3 | 2 | 2 |
| <b>第四學年 Fourth Year</b> |   |   |   |   |   |   |   |
| <b>多媒體科技學群選修</b>        |   |   |   |   |   |   |   |
| 巨量資料應用                  | Application of Big Data                         | 3 | 3 | 0 |   |   |   |
| 計算機系統與效能                | Computer System and Performance                 |   |   |   | 3 | 3 | 0 |
| 軟體工程概論                  | An Introduction to Software Engineering         |   |   |   | 3 | 3 | 0 |
| 智慧電子設計應用概論              | Introduction to Innovative Electronic Design    |   |   |   | 3 | 3 | 0 |
| <b>學程共同選修</b>           |   |   |   |   |   |   |   |
| 企業資源規劃                  | Enterprise Resource Planning                    | 3 | 3 | 0 |   |   |   |
| 科技英文(一)                 | English for Science and Technology ( I )        | 3 | 3 | 0 |   |   |   |
| △iOS 應用程式設計             | Application Programming in iOS System           | 3 | 3 | 0 |   |   |   |
| 科技英文(二)                 | English for Science and Technology ( II )       |   |   |   | 3 | 3 | 0 |
| 供應鏈資訊系統                 | Supply Chain Information System                 |   |   |   | 3 | 3 | 0 |
| △MatLab 程式開發與工程應用       | MATLAB Programming and Engineering Applications |   |   |   | 3 | 3 | 0 |
| △.net 程式設計實務            | The Practice of Programming .NET                |   |   |   | 3 | 3 | 0 |
| <b>智慧型嵌入式技術學群選修</b>     |   |   |   |   |   |   |   |
| △機器人控制與感測               | Robot Control & Sensing                         | 3 | 3 | 0 |   |   |   |
| 軟式計算                    | Soft Computing                                  | 3 | 3 | 0 |   |   |   |
| 物聯網(IOT)整合應用            | Application integration of Internet of Things   | 3 | 3 | 0 |   |   |   |
| 車載網路技術與應用               | Vehicle network technologies and applications   |   |   |   | 3 | 3 | 0 |

|   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|
| 智慧型系統設計概論                               | Introduction to Smart-Living System Design          |   |   |   | 3 | 3 | 0 |
| 機器視覺應用                                  | Machine Vision Applications                         |   |   |   | 3 | 3 | 0 |
| <b>共同選修科目 General Electives Courses</b> |   |   |   |   |   |   |   |
| <b>第一學年 First Year</b>                  |   |   |   |   |   |   |   |
| 全民國防教育軍事訓練(一)                           | All-Out Defense Education Military Training ( I )   | 1 | 2 | 0 |   |   |   |
| 全民國防教育軍事訓練(二)                           | All-Out Defense Education Military Training ( II )  |   |   |   | 1 | 2 | 0 |
| <b>第二學年 Second Year</b>                 |   |   |   |   |   |   |   |
| 全民國防教育軍事訓練(三)                           | All-Out Defense Education Military Training ( III ) | 1 | 2 | 0 |   |   |   |
| 全民國防教育軍事訓練(四)                           | All-Out Defense Education Military Training ( IV )  |   |   |   | 1 | 2 | 0 |
| <b>第三學年 Third Year</b>                  |   |   |   |   |   |   |   |
| 通識選修課程                                  | Liberal Education                                   | 2 | 2 | 0 | 2 | 2 | 0 |
| 體育選修                                    | Physical Elective Course                            | 1 | 2 | 0 | 1 | 2 | 0 |
| 全民國防教育軍事訓練(五)                           | All-Out Defense Education Military Training ( V )   | 1 | 2 | 0 |   |   |   |
| <b>第四學年 Fourth Year</b>                 |   |   |   |   |   |   |   |
| 體育選修                                    | Physical Elective Course                            | 1 | 2 | 0 | 1 | 2 | 0 |

| 學分學時總數計算表   |     |    |    |     |    |    |             |     |    |    |     |    |    |             |     |    |    |     |    |    |             |     |    |    |     |    |    |
|-------------|-----|----|----|-----|----|----|-------------|-----|----|----|-----|----|----|-------------|-----|----|----|-----|----|----|-------------|-----|----|----|-----|----|----|
| 第一學年        |     |    |    |     |    |    | 第二學年        |     |    |    |     |    |    | 第三學年        |     |    |    |     |    |    | 第四學年        |     |    |    |     |    |    |
|             | 上學期 |    |    | 下學期 |    |    |             | 上學期 |    |    | 下學期 |    |    |             | 上學期 |    |    | 下學期 |    |    |             | 上學期 |    |    | 下學期 |    |    |
|             | 學分  | 學時 |    | 學分  | 學時 |    |             | 學分  | 學時 |    | 學分  | 學時 |    |             | 學分  | 學時 |    | 學分  | 學時 |    |             | 學分  | 學時 |    | 學分  | 學時 |    |
|             |     | 正課 | 實習 |     | 正課 | 實習 |             |     | 正課 | 實習 |     | 正課 | 實習 |             |     | 正課 | 實習 |     | 正課 | 實習 |             |     | 正課 | 實習 |     | 正課 | 實習 |
| 必修科目學分/時數   | 15  | 17 | 0  | 18  | 19 | 2  | 必修科目學分/時數   | 19  | 20 | 2  | 16  | 18 | 0  | 必修科目學分/時數   | 10  | 9  | 2  | 10  | 9  | 2  | 必修科目學分/時數   | 0   | 0  | 0  | 0   | 0  | 0  |
| 最低選修科目學分/時數 | 0   | 0  | 0  | 0   | 0  | 0  | 最低選修科目學分/時數 | 0   | 0  | 0  | 0   | 0  | 0  | 最低選修科目學分/時數 | 6   | 6  | 0  | 6   | 6  | 0  | 最低選修科目學分/時數 | 9   | 9  | 0  | 9   | 9  | 0  |
| 總學分數及時數累計   | 15  | 17 | 0  | 18  | 19 | 2  | 總學分數及時數累計   | 19  | 20 | 2  | 16  | 18 | 0  | 總學分數及時數累計   | 16  | 15 | 2  | 16  | 15 | 2  | 總學分數及時數累計   | 9   | 9  | 0  | 9   | 9  | 0  |

備註 Note:

一、畢業至少應修滿 130 學分【必修 88 學分，選修至少 42 學分(須含本系專業選修至少 30 學分)】

Students should complete at least 130 credits before graduation, including 88 required credits, 42 elective credits (elective credits should have at least 30 credits from department elective courses).

二、通識教育學院所開設之「博雅通識課程」學分數(時)為 2 學分 2 學時或 3 學分 3 學時，經 101 學年度第二學期校課程委員會會議通過，進修部四技學生應修習二門不同領域課程，學分總計至少四學分。

Liberal Arts General Study courses provided by College of General Education, are divided into 2 hours course with 2 credits or 3 hours course with 3 credits, ratified by the School Course Committee in 2012. Four-year students in the Division of Continuing Education should take 2 courses in different fields for a minimum of 4 credits.

三、課程名稱前有標示「△」符號者，為「程式設計課程」。

Courses with a "△" refers to an application design course.

四、課程名稱前有標示「●」符號者，為「職能專業課程」。

Courses with a "●" refer to a professional competence course.

五、課程名稱前有標示「AI」符號者，為「人工智慧相關課程」。

Courses with an "AI" refer to an artificial intelligence related course.