

國立勤益科技大學進修部四年制113學年度人工智慧應用工程系學分計畫表

National Chin-Yi University of Technology Continuing Education Division
Curriculum for 2024 Four-Year Bachelor Program of Department of Artificial Intelligence and Computer Engineering

112.11.08系務暨課程會議通過
112.11.22院課程會議審議通過
112.12.07.校課程委員會及112.12.21.臨時教務會議審議通過
113.04.09.系課程修正通過
113.04.30院課程會議審議修正通過
113.5.21.校課程委員會及113.6.6.臨時教務會議審議修正通過
113.09.06.系課程會議審議通過
113.11.01.系課程會議審議通過
113.11.20.院課程委員會會議審議通過
113.12.05 校課程委員會及113.12.24 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 Credit | 正課 Lecture | 實習 Internship | 學分 Credit | 正課 Lecture | 實習 Internship |
| 共同必修科目(28學分)General Required Courses(28credits 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 | | | |
| 歷史與文化(一) | History and Culture (I) | 2 | 2 | 0 | | | |
| 體育(一) | Physical Education (I) | 0 | 2 | 0 | | | |
| 音樂鑑賞(一) | Music Appreciation (I) | 1 | 1 | 0 | | | |
| 國文(二) | Chinese (II) | | | | 3 | 3 | |
| 大一英文(二) | Freshman English (II) | | | | 2 | 2 | |
| 英文聽講(二) | English Listening and Speaking (II) | | | | 1 | 1 | |
| 歷史與文化(二) | History and Culture (II) | | | | 2 | 2 | |
| 音樂鑑賞(二) | Music Appreciation (II) | | | | 1 | 1 | |
| 體育(二) | Physical Education (II) | | | | 0 | 2 | |
| 第二學年Second Year | | | | | | | |
| 憲法與民主(一) | Constitution and Democracy (I) | 2 | 2 | 0 | | | |
| 博雅通識課程 | Liberal Education Curriculums | 2 | 2 | 0 | | | |
| 體育(三) | Physical Education (III) | 0 | 2 | 0 | | | |
| 憲法與民主(二) | Constitution and Democracy (II) | | | | 2 | 2 | |
| 博雅通識課程 | Liberal Education Curriculums | | | | 2 | 2 | |
| 體育(四) | Physical Education (IV) | | | | 0 | 2 | |
| 第三學年Third Year | | | | | | | |
| 藝術鑑賞(一) | Art Appreciation (I) | 1 | 1 | 0 | | | |
| 藝術鑑賞(二) | Art Appreciation (II) | | | | 1 | 1 | |
| 科目 | Courses | 上學期First Semester | | | 下學期Second Semester | | |
| | | 學分 Credit | 正課 Lecture | 實習 Internship | 學分 Credit | 正課 Lecture | 實習 Internship |
| 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 | | | |
| △Python程式設計實務 | Python Programming | 3 | 3 | 0 | | | |
| 微處理機概論 | Introduction to Microprocessors | 3 | 3 | 0 | | | |
| 微積分(二) | Calculus (II) | | | | 3 | 3 | |
| △物件導向程式設計 | Object-oriented Programming | | | | 3 | 3 | |
| 「AI」人工智慧概論 | Introduction to Artificial Intelligence | | | | 3 | 3 | |
| 第二學年Second Year | | | | | | | |
| 「AI」機器學習概論 | Introduction to Machine Learning | 3 | 3 | 0 | | | |
| 資料結構 | Data Structures | 3 | 3 | 0 | | | |
| Linux系統實務 | Linux System Practice | 3 | 3 | 0 | | | |
| 線性代數 | Linear Algebra | 3 | 3 | 0 | | | |
| 數位影像處理導論 | Introduction to Digital Image Processing | | | | 3 | 3 | |
| 作業系統 | Operating Systems | | | | 3 | 3 | |
| 「AI」深度學習理論與應用 | Deep Learning Theory and Applications | | | | 3 | 3 | |
| 離散數學 | Discrete Mathematics | | | | 3 | 3 | |
| 第三學年Third Year | | | | | | | |
| 「AI」Python機器學習應用實務 | Python Machine Learning Application Practice | 3 | 3 | 0 | | | |
| 邊緣計算實務 | Edge Computing Practice | 3 | 3 | 0 | | | |
| 容器化部署 | Containerized Deployment | | | | 3 | 3 | |
| ●電腦視覺概論 | Computer Vision Fundamentals | | | | 3 | 3 | |
| 第四學年Fourth Year | | | | | | | |
| 「AI」△●AI實務專題(一) | Project Study (I) | 3 | 2 | 2 | | | |
| 「AI」△●AI實務專題(二) | Project Study (II) | | | | 3 | 2 | |

| 科目 | Courses | 上學期First Semester | | | 下學期Second Semester | | |
|-------------------------------------|---|-------------------|---------------|------------------|--------------------|---------------|------------------|
| | | 學分 Credit | 正課 Lecture | 實習 Internship | 學分 Credit | 正課 Lecture | 實習 Internship |
| 專業選修科目 Department Electives Courses | | | | | | | |
| 第一學年 First Year | | | | | | | |
| 電腦軟體應用與設計 | Computer Software Application and Design | | | | 3 | 3 | 0 |
| △互動藝術程式設計 | Creative Coding | | | | 3 | 3 | 0 |
| 第二學年 Second Year | | | | | | | |
| △系統分析與設計 | System Analysis and Design | 3 | 3 | 0 | | | |
| 機率與統計 | Probability and Statistics | 3 | 3 | 0 | | | |
| 多媒體概論 | Introduction to Multimedia | 3 | 3 | 0 | | | |
| 「AI」AI應用數學概論 | Introduction to AI Applied Mathematics | 3 | 3 | 0 | | | |
| △網頁設計與網站管理 | Web Design and Website Management | 3 | 3 | 0 | | | |
| ●嵌入式系統與感測器應用概論 | Introduction to Embedded System and Sensor Application | 3 | 3 | 0 | | | |
| 空拍攝影應用 | Applications of Aerial Photography | 3 | 3 | 0 | | | |
| △C語言程式設計 | C Language Programming | 3 | 3 | 0 | | | |
| 資料擷取與感測器實務 | Data Acquisition and Sensor Practice | 3 | 3 | 0 | | | |
| 元宇宙藝術導論 | Introduction to Metaverse Art | 3 | 3 | 0 | | | |
| △●資料庫應用 | Database Applications | 3 | 3 | 0 | | | |
| 系統架構與軟體工程實務 | System Architecture and Software Engineering Practice | | | | 3 | 3 | 0 |
| ●Linux系統實務 | Linux System Practice | | | | 3 | 3 | 0 |
| 生產與作業管理實務 | Production and Operation Management Practice | | | | 3 | 3 | 0 |
| 3D動畫實務 | 3D Animation Practice | | | | 3 | 3 | 0 |
| 實境技術 | Reality Technology | | | | 3 | 3 | 0 |
| 職場倫理 | Workplace Ethics | | | | 3 | 3 | 0 |
| 計算機網路概論 | Introduction to Computer Networks | | | | 3 | 3 | 0 |
| 第三學年 Third Year | | | | | | | |
| 「AI」數據分析與機器學習實務 | Data Analysis and Machine Learning Practice | 3 | 3 | 0 | | | |
| ●OpenCV影像處理實務 | OpenCV Image Processing Practice | 3 | 3 | 0 | | | |
| ●物聯網控制實務 | Internet of Things Control Practice | 3 | 3 | 0 | | | |
| 智慧機械概論 | Introduction to Intelligent Machinery | 3 | 3 | 0 | | | |
| ●智慧機械APP設計實務 | Smart Machinery APP Design Practice | 3 | 3 | 0 | | | |
| 計算機組織 | Computer Organization | 3 | 3 | 0 | | | |
| 行動裝置應用設計實務 | Mobile Device Application Design Practice | 3 | 3 | 0 | | | |
| 網路協定分析實務 | Network Protocol Analysis Practice | 3 | 3 | 0 | | | |
| ●實驗設計實務 | Experimental Design Practice | 3 | 3 | 0 | | | |
| 「AI」人工智慧技術實務 | Artificial Intelligence Technology Practice | 3 | 3 | 0 | | | |
| 「AI」AI影像辨識實務 | AI image Recognition Practice | 3 | 3 | 0 | | | |
| 資訊安全導論 | Introduction to Information Security | | | | 3 | 3 | 0 |
| 「AI」AI繪圖實務 | AI Drawing Practice | | | | 3 | 3 | 0 |
| △遊戲程式設計實務 | Game Programming Practice | | | | 3 | 3 | 0 |
| 3D列印工程實務 | 3D Printing Engineering Practice | | | | 3 | 3 | 0 |
| ●工業物聯網數據擷取與應用實務 | Data Acquisition and Application Practice using Industrial Internet of Things | | | | 3 | 3 | 0 |
| △「AI」深度學習程式實務 | Deep Learning Program Practice | | | | 3 | 3 | 0 |
| 「AI」仿生演算法 | Bionic Algorithm | | | | 3 | 3 | 0 |
| 雲端生產數據維運實務 | Cloud Production Data Maintenance and Operation Practice | | | | 3 | 3 | 0 |
| ●AOI工程應用實務 | AOI Engineering Application Practice | | | | 3 | 3 | 0 |
| 「AI」△機器學習程式實務 | Programming Practice of Machine-Learning | | | | 3 | 3 | 0 |
| 「AI」推薦系統 & 聊天機器人實務 | Recommendation System & Chat Bot Practice | | | | 3 | 3 | 0 |
| 體感互動裝置 | Somatosensory Interactive Device | | | | 3 | 3 | 0 |
| ●大數據與資料探勘實務 | Big Data and Data Exploration Practice | | | | 3 | 3 | 0 |
| 第四學年 Fourth Year | | | | | | | |
| 「AI」AI生醫影像分析實務 | AI Biomedical Sensing Practice | 3 | 3 | 0 | | | |
| 雲端運算實務 | Cloud Computing Practice | 3 | 3 | 0 | | | |
| 「AI」AI產業應用實務 | AI Industrial Application Practice | 3 | 3 | 0 | | | |
| 擴增實境原理與應用 | Principles and Applications of Augmented Reality | 3 | 3 | 0 | | | |
| 「AI」智慧機械SMB實務 | Smart Machine Box Practice | 3 | 3 | 0 | | | |
| ●機電整合實務 | Introduction to Mechatronics | 3 | 3 | 0 | | | |
| 光學系統實務 | Optical System Practice | 3 | 3 | 0 | | | |
| 資料視覺化 | Data Visualization | 3 | 3 | 0 | | | |
| 「AI」機器人學 | Robotics | 3 | 3 | 0 | | | |
| 科技英文(一) | English for Science and Technology (I) | 3 | 3 | 0 | | | |
| 雲端環境管理與維護實務 | Cloud Environment Management and Maintenance Practice | 3 | 3 | 0 | | | |
| 「AI」AI自然語言處理實務 | AI Natural Language Practice | 3 | 3 | 0 | | | |
| 電腦視覺實務 | Computer Vision Practice | 3 | 3 | 0 | | | |

| | | | | | | | | | | | | | | | | |
|--|---|-------------------|------------------------|------------------|-----------------------|---------------|------------------------|------------|-----------------------|------------|------------------------|------------|-----------------------|------------|------------------------|------------|
| ●工業物聯網資安威脅與防護 | Industrial Internet of Things Security Protection | | | | | 3 | 3 | 0 | | | | | | | | |
| ●工業機械手臂實務 | Industrial Robotic Arm Practice | | | | | 3 | 3 | 0 | | | | | | | | |
| 「AI」AI虛擬實境實務 | AI Virtual Reality Practice | | | | | 3 | 3 | 0 | | | | | | | | |
| ●大數據分析實務 | Big data Analysis Practice | | | | | 3 | 3 | 0 | | | | | | | | |
| 系統性創新方法實務 | Systematic Innovation Method and Practice | | | | | 3 | 3 | 0 | | | | | | | | |
| 資通訊專案管理 | Information and Communication Project Management | | | | | 3 | 3 | 0 | | | | | | | | |
| 科技英文(二) | English for Science and Technology (II) | | | | | 3 | 3 | 0 | | | | | | | | |
| 軟體工程實務 | Software Engineering Practice | | | | | 3 | 3 | 0 | | | | | | | | |
| 自動控制理論 | Automatic Control Theory | | | | | 3 | 3 | 0 | | | | | | | | |
| 科目 | Courses | 上學期First Semester | | | 下學期Second Semester | | | | | | | | | | | |
| | | 學分 Credit | 正課 Lecture | 實習 Internship | 學分 Credit | 正課 Lecture | 實習 Internship | | | | | | | | | |
| 共同選修科目General Elective Courses | | | | | | | | | | | | | | | | |
| 第一學年First Year | | | | | | | | | | | | | | | | |
| 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 | | | | | | | | | |
| 第二學年Second Year | | | | | | | | | | | | | | | | |
| 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 | | | | | | | | | |
| 第三學年Third Year | | | | | | | | | | | | | | | | |
| 全民國防教育軍事訓練(五) | All-Out Defense Education Military Training (V) | 1 | 2 | 0 | | | | | | | | | | | | |
| 體育選修 | Physical Elective Course | 1 | 2 | 0 | | | | | | | | | | | | |
| 通識選修 | General Elective Course | 2 | 2 | 0 | | | | | | | | | | | | |
| 體育選修 | Physical Elective Course | | | | 1 | 2 | 0 | | | | | | | | | |
| 通識選修 | General Elective Course | | | | 2 | 2 | 0 | | | | | | | | | |
| 第四學年Fourth Year | | | | | | | | | | | | | | | | |
| 體育選修 | Physical Elective Course | 1 | 2 | 0 | | | | | | | | | | | | |
| 體育選修 | Physical Elective Course | | | | 1 | 2 | 0 | | | | | | | | | |
| 學分/時數統計 Credit/Hour Total | 第一學年First Year | | | | 第二學年Second Year | | | | 第三學年Third Year | | | | 第四學年Fourth Year | | | |
| | 上學期 First Semester | | 下學期 Second Semester | | 上學期 First Semester | | 下學期 Second Semester | | 上學期 First Semester | | 下學期 Second Semester | | 上學期 First Semester | | 下學期 Second Semester | |
| | 學分 Credit | 學時 Hour | 學分 Credit | 學時 Hour | 學分 Credit | 學時 Hour | 學分 Credit | 學時 Hour | 學分 Credit | 學時 Hour | 學分 Credit | 學時 Hour | 學分 Credit | 學時 Hour | 學分 Credit | 學時 Hour |
| 必修科目學分/時數 Required Courses Credit / Hour | 18 | 20 | 18 | 20 | 16 | 18 | 16 | 18 | 7 | 7 | 7 | 7 | 3 | 4 | 3 | 4 |
| 最低選修科目學分/時數 Minimum Electives Courses Credit / Hour | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 9 | 9 | 9 | 12 | 12 | 12 | 12 |
| 總學分數/時數累計 Credits / Hours Total | 18 | 20 | 18 | 20 | 16 | 18 | 16 | 18 | 16 | 16 | 16 | 16 | 15 | 16 | 15 | 16 |

備註Note:

- 畢業至少應修滿 128 學分【必修 88 學分，選修至少 40 學分(其中至少需含本系專業選修 27 學分)】。
Students should complete at least 128 credits before graduation, including 88 required credits, 40 elective credits (elective credits should have at least 27 credits from department elective courses).
- 博雅通識課程三大領域中，應修習二門不同領域課程，學分總計至少4學分。
Among the 3 core areas of liberal education curriculum, students should take 4 or more credits in 2 different areas.
- 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.
- 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.
- 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
- 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.