

國立勤益科技大學 113 學年度 化工與材料工程系碩士班學分計畫表  
National Chin-Yi University of Technology  
Curriculum Planning of 2024 Master's Degree in Department of Chemical and Materials Engineering

112.10.24 系課程會議審議通過  
112.11.08 系務會議審議通過  
112.11.23 院課程會議審議通過  
112.12.07.校課程委員會議及 112.12.21.臨時教務會議審議通過  
113.12.5.校課程委員會議及 113.12.24.臨時教務會議審議修訂通過

| 科目   | Subjects  | 上學期<br>First Semester |            | 下學期<br>Second Semester |            |
|--|---|-----------------------|------------|------------------------|------------|
|  |   | 學分<br>Credits         | 學時<br>Hour | 學分<br>Credits<br>Hours | 學時<br>Hour |
| 必修科目(10 學分) Required Courses (10 credits 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          |                        |            |
| 論文（一）  | Thesis (I)  | 3                     | 3          |                        |            |
| 專題討論（四）  | Seminar (IV)  |                       |            | 1                      | 2          |
| 論文（二）  | Thesis (II)   |                       |            | 3                      | 3          |
| 專業選修科目 Department Electives Courses                        |   |                       |            |                        |            |
| 第一學年 First Year  |   |                       |            |                        |            |
| 核心選修-材料核心選修 Core Optional Courses for Materials            |   |                       |            |                        |            |
| 高分子定性與分析   | Polymer Characterization and Analysis               | 3                     | 3          |                        |            |
| 高等材料科學   | Advanced Materials Science                          | 3                     | 3          |                        |            |
| 材料結構與性質  | Structure and Properties of Materials               |                       |            | 3                      | 3          |
| 高等高分子物理  | Advanced Polymer Physics                            |                       |            | 3                      | 3          |
| 高等有機化學   | Advanced Organic Chemistry                          |                       |            | 3                      | 3          |
| 核心選修-化工核心選修 Core Optional Courses for Chemical Engineering |   |                       |            |                        |            |
| 高等流力   | Advanced Fluid Mechanics                            | 3                     | 3          |                        |            |
| 高等化工熱力學  | Advanced Chemical Engineering Thermodynamics        | 3                     | 3          |                        |            |
| 高等質傳   | Advanced Mass Transfer                              | 3                     | 3          |                        |            |
| 高等熱傳   | Advanced Heat Transfer                              |                       |            | 3                      | 3          |
| 高等化工動力學  | Advanced Chemical Kinetics                          |                       |            | 3                      | 3          |
| 共同選修科目 General Elective Courses                            |   |                       |            |                        |            |
| 奈米材料與化工技術  | Nanomaterials and Chemical Technology               | 3                     | 3          |                        |            |
| 高等電化學  | Advanced Electrochemistry                           | 3                     | 3          |                        |            |
| 電化學技術與應用   | Electrochemical Techniques and Applications         | 3                     | 3          |                        |            |
| 程序控制特論   | Special Topics in Process Control                   | 3                     | 3          |                        |            |
| 影像顯示科技特論   | Special Topics of Display Science and Technology    | 3                     | 3          |                        |            |
| 觸媒科技與技術  | Catalysis Science and Technology                    | 3                     | 3          |                        |            |
| 導電性高分子   | Conductive Polymer                                  |                       |            | 3                      | 3          |
| 光電與奈米材料特論  | Special Topics of Optoelectronic and Nano Materials |                       |            | 3                      | 3          |
| 複合材料特論   | Special Topics in Composite Materials               |                       |            | 3                      | 3          |
| 奈米科技特論   | Special Topics in Nano Sciences                     |                       |            | 3                      | 3          |
| 科技溝通與展示  | Technical Communication and Presentation            |                       |            | 3                      | 3          |
| 薄膜科技   | Membrane Technology                                 |                       |            | 3                      | 3          |
| 化妝品材料  | Cosmetic Materials                                  |                       |            | 3                      | 3          |
| 生醫材料特論   | Special Topics in Biomedical Materials              |                       |            | 3                      | 3          |
| 物理化學水處理  | Physiochemical Treatment                            |                       |            | 3                      | 3          |
| 實驗設計與分析  | Design and Analysis of Experiments                  |                       |            | 3                      | 3          |
| 燃料電池   | Fuel Cell   |                       |            | 3                      | 3          |
| 生物化學特論   | Special Topics in Biochemistry                      |                       |            | 3                      | 3          |
| 生物科技之應用  | Applications of Biotechnology                       |                       |            | 3                      | 3          |
| 固體表面分析技術   | Analytical Methods for Solid Surface                |                       |            | 3                      | 3          |
| 高分子動態與流變   | Dynamics and Rheology of Polymer                    |                       |            | 3                      | 3          |
| 觸媒化學特論   | Special Topics in Catalyst Chemistry                |                       |            | 3                      | 3          |
| 製程安全評估   | Process Safety Assessment                           |                       |            | 3                      | 3          |
| 第二學年 Second Year   |   |                       |            |                        |            |
| 共同選修科目 General Electives Courses                           |   |                       |            |                        |            |
| 校外實務研究（暑期）   | Graduate On-Site Research (Summer/Jul. -Aug.)       | 3                     | 3          |                        |            |
| 校外實務研究（一）  | Graduate On-Site Research (I)                       | 9                     | 9          |                        |            |
| 校外實務研究（二）  | Graduate On-Site Research (II)                      |                       |            | 9                      | 9          |

備註 Note：

一、畢業至少應修滿 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）。

Before graduation, each student should complete at least 34 credits, including 10 required credits (Thesis 6 credits and Seminar 4 credits) and 24 elective credits (at least 24 credits should be completed in department elective courses).

- 二、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 defence applicaiton.

- 三、學生修習碩士班開授全英文授課課程，可抵修核心選修課程。

Department Elective Courses can be exempted with All English Courses for graduate students.

- 四、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.