

### 【春乙】 課程規劃表

| 第四學年 |               |            |    |            |    |
|------|---------------|------------|----|------------|----|
|      | 科目            | 上學期(113-2) |    | 下學期(114-1) |    |
|      |               | 學分         | 時數 | 學分         | 時數 |
| 校必修  |               |            |    |            |    |
|      | 小計            | 0          | 0  | 0          | 0  |
| 院必修  |               |            |    |            |    |
|      | 小計            | 0          | 0  | 0          | 0  |
| 專業必修 |               |            |    |            |    |
|      |               |            |    |            |    |
|      | 小計            | 0          | 0  | 0          | 0  |
|      | 專業實務實習(三)(四)  | 9          | 9  | 9          | 32 |
|      | 有機電子          | 3          | 3  |            |    |
|      | 工廠管理          | 3          | 3  |            |    |
|      | 綠色化學          | 3          | 3  |            |    |
|      | 氫能與燃料電池       |            |    | 3          | 3  |
|      | 彩色濾光片製程技術     |            |    | 3          | 3  |
|      | 表面工程與AI輔助     |            |    | 3          | 3  |
|      | 半導體元件         | 3          | 3  |            |    |
|      | 奈米技術與材料       | 3          | 3  |            |    |
| 專業選修 | 人工智慧倫理、法律與社會  | 3          | 3  |            |    |
|      | 人工智慧深度學習      | 3          | 3  |            |    |
|      | 圖控程式設計        | 3          | 3  |            |    |
|      | Python程式應用    | 3          | 3  |            |    |
|      | python與機器學習概論 | 3          | 3  |            |    |
|      | 光譜分析          | 3          | 3  |            |    |
|      | 工程專業術語實務      | 3          | 3  |            |    |
|      | 生成式人工智慧與應用    | 3          | 3  |            |    |

5. 校外實習課程：產業實務實習(一)(二)(三)(四)，一學分至多80小時。產業實務實習(一)、(二)實際實習時數每週32-36小時，產業實務實習(三)、(四)實際實習時數每週32-40小時。

院長簽章:



MUST Curriculum Planning for Undergraduate Students of Academic Year 2022-2025,  
Department of Chemical and Materials Engineering

| 1 <sup>st</sup> year                 |                                                  |                          |     |                          |     | 2 <sup>nd</sup> year                 |                                          |                          |     |                          |     | 3 <sup>rd</sup> year                 |                                                               |                          |     |                          |     |
|--------------------------------------|--------------------------------------------------|--------------------------|-----|--------------------------|-----|--------------------------------------|------------------------------------------|--------------------------|-----|--------------------------|-----|--------------------------------------|---------------------------------------------------------------|--------------------------|-----|--------------------------|-----|
|                                      | Course                                           | 1 <sup>st</sup> semester |     | 2 <sup>nd</sup> semester |     |                                      | Course                                   | 1 <sup>st</sup> semester |     | 2 <sup>nd</sup> semester |     |                                      | Course                                                        | 1 <sup>st</sup> semester |     | 2 <sup>nd</sup> semester |     |
|                                      |                                                  | Cr.                      | hr. | Cr.                      | hr. |                                      |                                          | Cr.                      | hr. | Cr.                      | hr. |                                      |                                                               | Cr.                      | hr. | Cr.                      | hr. |
| MUST Core Required Courses           | Chinese Reading                                  | 1                        | 2   |                          |     | MUST Core Required Courses           |                                          |                          |     |                          |     | MUST Core Required Courses           | Physical Education                                            | 2                        | 2   |                          |     |
|                                      | Chinese Writing                                  |                          |     | 1                        | 2   |                                      |                                          |                          |     |                          |     |                                      | Life and Law in Taiwan                                        | 2                        | 2   |                          |     |
|                                      | Chinese Pronunciation Practice                   | 1                        | 2   |                          |     |                                      |                                          |                          |     |                          |     |                                      | Taiwanese Society                                             | 2                        | 2   |                          |     |
|                                      | Chinese Listening                                | 1                        | 2   |                          |     |                                      |                                          |                          |     |                          |     |                                      | Taiwanese culture                                             |                          |     | 2                        | 2   |
|                                      | Chinese Daily Speaking                           | 1                        | 2   |                          |     |                                      |                                          |                          |     |                          |     |                                      | Taiwanese art                                                 |                          |     | 2                        | 2   |
|                                      | Physical Education                               |                          |     | 2                        | 2   |                                      |                                          |                          |     |                          |     |                                      |                                                               |                          |     |                          |     |
|                                      | Chinese Literature and Culture (I)(II)           | 3                        | 3   | 3                        | 3   |                                      |                                          |                          |     |                          |     |                                      |                                                               |                          |     |                          |     |
|                                      | Chinese tutor                                    |                          |     | 0                        | 5   |                                      |                                          |                          |     |                          |     |                                      |                                                               |                          |     |                          |     |
|                                      | Subtotal                                         | 7                        | 11  | 6                        | 12  |                                      | Subtotal                                 | 0                        | 0   | 0                        | 0   |                                      | Subtotal                                                      | 6                        | 6   | 4                        | 4   |
| School Professional Required Courses | Ethics for Engineers                             |                          |     | 2                        | 2   | School Professional Required Courses |                                          |                          |     |                          |     | School Professional Required Courses | English (II)                                                  | 2                        | 2   |                          |     |
|                                      | English (I)                                      |                          |     | 2                        | 2   |                                      |                                          |                          |     |                          |     |                                      | Technical English(I)                                          |                          |     | 2                        | 2   |
|                                      | Subtotal                                         | 0                        | 0   | 4                        | 4   |                                      | Subtotal                                 | 0                        | 0   | 0                        | 0   |                                      | Technical English(II)                                         |                          |     | 2                        | 2   |
| Department compulsory courses        | General Chemistry                                | 3                        | 3   |                          |     | Department compulsory courses        | Professional Practice (I)                | 9                        | 9   |                          |     | Department compulsory courses        | Organic Chemistry and Organic Chemistry Laboratory            | 3                        | 3   |                          |     |
|                                      | Chemistry Lab                                    | 3                        | 3   |                          |     |                                      | Professional Practice (II)               |                          |     | 9                        | 9   |                                      | Polymer Materials                                             | 3                        | 3   |                          |     |
|                                      | Foundations of Materials Science and Engineering | 3                        | 3   |                          |     |                                      |                                          |                          |     |                          |     |                                      | Semiconductor Manufacturing Technology                        | 3                        | 3   |                          |     |
|                                      | Applied Mathematics                              | 3                        | 3   |                          |     |                                      |                                          |                          |     |                          |     |                                      | Applications and Practices of Computer Programming            | 3                        | 3   |                          |     |
|                                      | University Physics                               |                          |     | 3                        | 3   |                                      |                                          |                          |     |                          |     |                                      | Instrumental Analysis and Experiment of Instrumental Analysis |                          |     | 3                        | 3   |
|                                      | Analytical chemistry experiment                  |                          |     | 2                        | 3   |                                      |                                          |                          |     |                          |     |                                      | Materials Analysis                                            |                          |     | 3                        | 3   |
|                                      | Physical Chemistry                               |                          |     | 3                        | 3   |                                      |                                          |                          |     |                          |     |                                      | Inorganic Chemistry                                           |                          |     | 3                        | 3   |
|                                      | Applications of Artificial Intelligence          |                          |     | 3                        | 3   |                                      |                                          |                          |     |                          |     |                                      |                                                               |                          |     |                          |     |
|                                      | Subtotal                                         | 12                       | 12  | 14                       | 15  |                                      | Subtotal                                 | 9                        | 9   | 9                        | 9   |                                      | Subtotal                                                      | 9                        | 9   | 12                       | 12  |
| Department Elective Courses          | Introduction to Chemical and Materials           | 2                        | 2   |                          |     | Department Elective Courses          | Cosmetic Formulation Laboratory          | 3                        | 3   |                          |     | Department Elective Courses          | solid-state chemistry                                         | 3                        | 3   |                          |     |
|                                      | Chemical safety engineering                      | 2                        | 2   |                          |     |                                      | Specialty Chemicals for Electronics      | 3                        | 3   |                          |     |                                      | composite materials                                           | 3                        | 3   |                          |     |
|                                      | Creative Vision Materials                        |                          |     | 3                        | 3   |                                      | Physical Chemistry and Experiment (II)   | 3                        | 3   |                          |     |                                      | thermodynamics                                                | 3                        | 3   |                          |     |
|                                      | Factory management                               |                          |     | 3                        | 3   |                                      | Inorganic Nanomaterials                  | 3                        | 3   |                          |     |                                      | Introduction to Cosmetic                                      |                          |     | 3                        | 3   |
|                                      |                                                  |                          |     |                          |     |                                      | Mass and Energy Balance                  | 3                        | 3   |                          |     |                                      | Introduction of Ceramic Materials                             |                          |     | 3                        | 3   |
|                                      |                                                  |                          |     |                          |     |                                      | Microcomputer Applications and Practicum | 2                        | 2   |                          |     |                                      | Electrochemistry                                              |                          |     | 3                        | 3   |
|                                      |                                                  |                          |     |                          |     |                                      | Introduction of Green Materials          |                          |     | 3                        | 3   |                                      |                                                               |                          |     |                          |     |

| 4 <sup>th</sup> year                 |                                                  |                          |     |                          |     |
|--------------------------------------|--------------------------------------------------|--------------------------|-----|--------------------------|-----|
|                                      | Course                                           | 1 <sup>st</sup> semester |     | 2 <sup>nd</sup> semester |     |
|                                      |                                                  | Cr.                      | hr. | Cr.                      | hr. |
| MUST Core Required Courses           |                                                  |                          |     |                          |     |
|                                      | Subtotal                                         | 0                        | 0   | 0                        | 0   |
| School Professional Required Courses |                                                  |                          |     |                          |     |
|                                      | Subtotal                                         | 0                        | 0   | 0                        | 0   |
| Department compulsory courses        |                                                  |                          |     |                          |     |
|                                      | Subtotal                                         | 0                        | 0   | 0                        | 0   |
| Department Elective Courses          | Professional Practice (III)(IV)                  | 9                        | 9   | 9                        | 32  |
|                                      | Organic electronics                              | 3                        | 3   |                          |     |
|                                      | Factory management                               | 3                        | 3   |                          |     |
|                                      | Green Chemistry                                  | 3                        | 3   |                          |     |
|                                      | Hydrogen energy and fuel cells                   |                          |     | 3                        | 3   |
|                                      | Manufacturing Color Filter Processing Technology |                          |     | 3                        | 3   |
|                                      | Surface Engineering and AI Assistance            |                          |     | 3                        | 3   |
|                                      | Semiconductor Devices                            | 3                        | 3   |                          |     |
|                                      | Nanotechnology and Materials                     | 3                        | 3   |                          |     |
|                                      | AI Ethics, Law, and Society                      | 3                        | 3   |                          |     |
|                                      | Artificial Intelligence-Deep Learning            | 3                        | 3   |                          |     |
|                                      | Labview Programming Design                       | 3                        | 3   |                          |     |
|                                      | Python Program Application                       | 3                        | 3   |                          |     |
|                                      | Introduction of Python and Machine Learning      | 3                        | 3   |                          |     |
|                                      | Spectroscopic Analysis                           | 3                        | 3   |                          |     |
|                                      | Engineering terminology                          | 3                        | 3   |                          |     |
|                                      | Generative AI and Applications                   | 3                        | 3   |                          |     |

Cr./hr.=Credit/hour

Remarks:

1. Minimum credits required for graduation: 128 credits including 96 compulsory credits, and at least 32 elective credits (including the interdepartmental elective c
2. Undergraduate students shall take 5-hour Chinese tutoring courses (0 credits) of the first academic year.
3. Inter-departmental elective credits are transferable. Professional elective course credits shall not be fewer than 16.
4. The elective courses listed in the tables are subject to adaptation when necessary.
5. The off-campus internship courses include: Industry Practice Internship (I), (II), (III), (IV), with a maximum of 80 hours of off-campus internship for one credit.  
Industry Practice Internship (I) and (II): The actual internship hours range from 32 to 36 hours per week.  
Industry Practice Internship (III) and (IV): The actual internship hours range from 32 to 40 hours per week.



應材系龍明有  
系主任

半導體學院張合  
院長