

113學年度課程規劃表

半導體與光電科技系

日間部四技國際專修部

| 第一學年(113)        |            |     |    |     |    | 第二學年(114)        |            |     |    |     |    | 第三學年(115)        |            |     |    |     |    |   |
|------------------|------------|-----|----|-----|----|------------------|------------|-----|----|-----|----|------------------|------------|-----|----|-----|----|---|
|                  | 科目         | 上學期 |    | 下學期 |    |                  | 科目         | 上學期 |    | 下學期 |    |                  | 科目         | 上學期 |    | 下學期 |    |   |
|                  |            | 學分  | 時數 | 學分  | 時數 |                  |            | 學分  | 時數 | 學分  | 時數 |                  |            | 學分  | 時數 | 學分  | 時數 |   |
| 校<br>必<br>修      | 分類通識       | 2   | 2  | 2   | 2  | 校<br>必<br>修      | 分類通識       | 2   | 2  | 2   | 2  | 校<br>必<br>修      |            |     |    |     |    |   |
|                  | 分類通識       | 2   | 2  | 2   | 2  |                  |            |     |    |     |    |                  |            |     |    |     |    |   |
|                  | 體育         | 2   | 2  | 2   | 2  |                  |            |     |    |     |    |                  |            |     |    |     |    |   |
|                  | 小計         | 6   | 6  | 6   | 6  |                  | 小計         | 2   | 2  | 2   | 2  |                  | 小計         | 0   | 0  | 0   | 0  |   |
| 院<br>必<br>修      | 科技英文(一)(二) | 2   | 2  | 2   | 2  | 院<br>必<br>修      | 科技英文(三)(四) | 2   | 2  | 2   | 2  | 院<br>必<br>修      |            |     |    |     |    |   |
|                  | 應用中文(一)(二) | 2   | 2  | 2   | 2  |                  |            |     |    |     |    |                  |            |     |    |     |    |   |
|                  | 微積分(一)(二)  | 3   | 3  | 3   | 3  |                  |            |     |    |     |    |                  |            |     |    |     |    |   |
|                  | 物理與物理實驗    | 2   | 2  |     |    |                  |            |     |    |     |    |                  |            |     |    |     |    |   |
|                  | 化學與化學實驗    | 2   | 2  |     |    |                  |            |     |    |     |    |                  |            |     |    |     |    |   |
|                  | 程式設計       | 2   | 2  |     |    |                  |            |     |    |     |    |                  |            |     |    |     |    |   |
|                  | 人工智慧概論     |     |    | 2   | 2  |                  |            |     |    |     |    |                  |            |     |    |     |    |   |
|                  | 小計         | 13  | 13 | 9   | 9  |                  | 小計         | 2   | 2  | 2   | 2  |                  | 小計         | 0   | 0  | 0   | 0  |   |
| 專<br>業<br>必<br>修 | 半導體與光電導論   |     |    | 2   | 2  | 專<br>業<br>必<br>修 | 電磁學(一)(二)  | 2   | 2  | 2   | 2  | 專<br>業<br>必<br>修 | 實務專題       | 1   | 1  | 1   | 1  |   |
|                  | 基礎電子學      |     |    | 2   | 2  |                  | 工程數學(一)(二) | 3   | 3  | 3   | 3  |                  | 光電實驗(二)    | 2   | 2  |     |    |   |
|                  | 電子學實驗(一)   |     |    | 3   | 3  |                  | 應用電子學      | 2   | 2  |     |    |                  | 半導體製程技術    | 3   | 3  |     |    |   |
|                  | 材料科學       |     |    | 2   | 2  |                  | 電子學實驗(二)   | 3   | 3  |     |    |                  | 工程倫理       |     |    | 2   | 2  |   |
|                  |            |     |    |     |    |                  | 近代物理概論     | 3   | 3  |     |    |                  | 雷射工程       |     |    | 2   | 2  |   |
|                  |            |     |    |     |    |                  | 幾何光學       |     |    | 2   | 2  |                  |            |     |    |     |    |   |
|                  |            |     |    |     |    |                  | 光電實驗(一)    |     |    | 2   | 2  |                  |            |     |    |     |    |   |
|                  |            |     |    |     |    |                  | 半導體材料與元件   |     |    | 3   | 3  |                  |            |     |    |     |    |   |
|                  |            |     |    |     |    |                  |            |     |    |     |    |                  |            |     |    |     |    |   |
|                  |            | 小計  | 0  | 0   | 9  |                  | 9          |     | 小計 | 13  | 13 |                  | 12         | 12  |    | 小計  | 6  | 6 |
| 專<br>業<br>選<br>修 | 半導體與光電產業概論 | 1   | 1  |     |    | 專<br>業<br>選<br>修 | 程式語言       | 2   | 2  |     |    | 專<br>業<br>選<br>修 | 實體設計與證照輔導  | 2   | 2  |     |    |   |
|                  | 電路學        | 2   | 2  |     |    |                  | 真空技術       | 2   | 2  |     |    |                  | 電腦輔助光學系統設計 | 2   | 2  |     |    |   |
|                  | 向量分析       | 3   | 3  |     |    |                  | 光電系統機構學    | 2   | 2  |     |    |                  | 基礎圖控程式設計   | 2   | 2  |     |    |   |
|                  | 華語證照輔導(一)  | 2   | 2  |     |    |                  | 電腦輔助實體設計   |     |    | 2   | 2  |                  | 數位電路實務     | 2   | 2  |     |    |   |
|                  | 華語語法與寫作    | 2   | 2  |     |    |                  | 材料科學與工程    |     |    | 2   | 2  |                  | 薄膜技術       | 2   | 2  |     |    |   |
|                  | 基本電學與電學實驗  |     |    | 2   | 2  |                  | 生物醫學工程導論   |     |    | 2   | 2  |                  | 固態照明       | 2   | 2  |     |    |   |
|                  | 光電實體建模     |     |    | 2   | 2  |                  | 積體電路工程     |     |    | 2   | 2  |                  | 波動光學       | 2   | 2  |     |    |   |
|                  | 電子電路與證照輔導  |     |    | 2   | 2  |                  |            |     |    |     |    |                  | 光電材料與元件物理  | 2   | 2  |     |    |   |
|                  | 華語證照輔導(二)  |     |    | 2   | 2  |                  |            |     |    |     |    |                  | 半導體實驗      |     |    | 3   | 3  |   |
|                  |            |     |    |     |    |                  |            |     |    |     |    |                  | 材料分析       |     |    | 3   | 3  |   |
|                  |            |     |    |     |    |                  |            |     |    |     |    |                  | 電腦輔助照明系統設計 |     |    | 2   | 2  |   |
|                  |            |     |    |     |    |                  |            |     |    |     |    |                  | 光電應用電路     |     |    | 2   | 2  |   |
|                  |            |     |    |     |    |                  |            |     |    |     |    |                  | 光電平面顯示器    |     |    | 3   | 3  |   |
|                  |            |     |    |     |    |                  |            |     |    |     |    |                  | 光電元件與應用    |     |    | 2   | 2  |   |
|                  |            |     |    |     |    |                  |            |     |    |     |    |                  | 色彩學        |     |    | 2   | 2  |   |
|                  |            |     |    |     |    |                  |            |     |    |     |    |                  | 薄膜光學與鍍膜技術  |     |    | 2   | 2  |   |
|                  |            |     |    |     |    |                  |            |     |    |     |    |                  | 光電感測工程     |     |    | 2   | 2  |   |
|                  |            |     |    |     |    |                  |            |     |    |     |    |                  | 微光機電系統概論   |     |    | 2   | 2  |   |
|                  |            |     |    |     |    |                  |            |     |    |     |    |                  | 半導體生醫晶片    |     |    | 2   | 2  |   |

| 第四學年(116)        |               |     |    |     |    |
|------------------|---------------|-----|----|-----|----|
|                  | 科目            | 上學期 |    | 下學期 |    |
|                  |               | 學分  | 時數 | 學分  | 時數 |
| 校<br>必<br>修      |               |     |    |     |    |
|                  |               |     |    |     |    |
|                  | 小計            | 0   | 0  | 0   | 0  |
| 院<br>必<br>修      |               |     |    |     |    |
|                  |               |     |    |     |    |
|                  | 小計            | 0   | 0  | 0   | 0  |
| 專<br>業<br>必<br>修 |               |     |    |     |    |
|                  |               |     |    |     |    |
|                  | 小計            | 0   | 0  | 0   | 0  |
| 專<br>業<br>選<br>修 | 校外實習(一)(二)    | 9   | 9  | 9   | 9  |
|                  | 實務專題(一)(二)    | 3   | 3  | 3   | 3  |
|                  | TFT-LCD面板設計與驅 | 3   | 3  |     |    |
|                  | 光電創意設計        | 3   | 3  |     |    |
|                  | 液晶材料與光學       | 3   | 3  |     |    |
|                  | 太陽光電技術        | 3   | 3  |     |    |
|                  | 電腦輔助光學薄膜設計    | 3   | 3  |     |    |
|                  | 光電半導體量測技術     | 3   | 3  |     |    |
|                  | 微光機電元件與系統     | 3   | 3  |     |    |
|                  | 太陽能驅動LED顯示裝   |     |    | 3   | 3  |
|                  | 科技管理          |     |    | 3   | 3  |
|                  | 半導體製程材料分析     |     |    | 3   | 3  |
|                  | 奈米生醫光電技術      |     |    | 3   | 3  |
|                  | 有機發光二極體顯示技    |     |    | 3   | 3  |
|                  | 投影顯示技術        |     |    | 3   | 3  |

【科目類別】

通識科目(分類通識)：校必修

共同科目(體育)：校必修

專業科目：院必修、專業必修、專業選修

| 【科目類別】    |     | 學分  | 時數  |
|-----------|-----|-----|-----|
| 通識科目、共同科目 | 校必修 | 16  | 16  |
|           | 院必修 | 26  | 26  |
| 專業科目      | 專業必 | 45  | 45  |
|           | 專業選 | 41  | 41  |
| 合計        |     | 128 | 128 |

【注意事項】

- 1.最低畢業學分：128學分，其中專業選修41學分(本系至少29學分，其餘可跨系)。
- 2.一、二、三年級每學期修課16~30學分，四年級每學期修課9~30學分。
- 3.表列專業選修課程，得依實際情況逕行調整。
- 4.依本校「學生基本能力與畢業門檻實施辦法」實施。
- 5.校外實習課程，依相關實施要點辦理。



半導體與光電科技系  
系主任 陳炳茂

半導體系課程  
規劃委員 1

半導體學院  
院長 張合

MUST Curriculum Planning for Undergraduate Students for Academic Years 2024-2027  
Department of Semiconductor and Electro-Optical Technology

| 1st year(2024)                       |                                                         |              |     |              | 2nd year(2025)                      |                                      |                                       |              |     | 3rd year(2026) |                   |                                      |                                                          |              |     |              |     |
|--------------------------------------|---------------------------------------------------------|--------------|-----|--------------|-------------------------------------|--------------------------------------|---------------------------------------|--------------|-----|----------------|-------------------|--------------------------------------|----------------------------------------------------------|--------------|-----|--------------|-----|
|                                      | Course                                                  | 1st semester |     | 2nd semester |                                     |                                      | Course                                | 1st semester |     | 2nd semester   |                   |                                      | Course                                                   | 1st semester |     | 2nd semester |     |
|                                      |                                                         | Cr.          | hr. | Cr.          | hr.                                 |                                      |                                       | Cr.          | hr. | Cr.            | hr.               |                                      |                                                          | Cr.          | hr. | Cr.          | hr. |
| MUST Core Required Courses           | Classified general Education                            | 2            | 2   | 2            | 2                                   | MUST Core Required Courses           | Classified general Education          | 2            | 2   | 2              | 2                 | MUST Core Required Courses           |                                                          |              |     |              |     |
|                                      | Classified general Education                            | 2            | 2   | 2            | 2                                   |                                      |                                       |              |     |                |                   |                                      |                                                          |              |     |              |     |
|                                      | Physical Education                                      | 2            | 2   | 2            | 2                                   |                                      |                                       |              |     |                |                   |                                      |                                                          |              |     |              |     |
|                                      | Subtotal                                                | 6            | 6   | 6            | 6                                   |                                      | Subtotal                              | 2            | 2   | 2              | 2                 |                                      | Subtotal                                                 | 0            | 0   | 0            | 0   |
| School Professional Required Courses | Technical English(I)(II)                                | 2            | 2   | 2            | 2                                   | School Professional Required Courses | Technical English(III)(IV)            | 2            | 2   | 2              | 2                 | School Professional Required Courses |                                                          |              |     |              |     |
|                                      | Applied Chinese(I)(II)                                  | 2            | 2   | 2            | 2                                   |                                      |                                       |              |     |                |                   |                                      |                                                          |              |     |              |     |
|                                      | Calculus(I)(II)                                         | 3            | 3   | 3            | 3                                   |                                      |                                       |              |     |                |                   |                                      |                                                          |              |     |              |     |
|                                      | Physics and Physics Laboratory                          | 2            | 2   |              |                                     |                                      |                                       |              |     |                |                   |                                      |                                                          |              |     |              |     |
|                                      | Chemistry and Laboratory                                | 2            | 2   |              |                                     |                                      |                                       |              |     |                |                   |                                      |                                                          |              |     |              |     |
|                                      | Introduction to Computersand Programming                | 2            | 2   |              |                                     |                                      |                                       |              |     |                |                   |                                      |                                                          |              |     |              |     |
|                                      | Introduction to Artificial Intelligence                 |              |     | 2            | 2                                   |                                      |                                       |              |     |                |                   |                                      |                                                          |              |     |              |     |
|                                      | Subtotal                                                | 13           | 13  | 9            | 9                                   |                                      | Subtotal                              | 2            | 2   | 2              | 2                 |                                      | Subtotal                                                 | 0            | 0   | 0            | 0   |
| Compulsory Courses                   | Introduction to Semiconductors and Optoelectronics      |              |     | 2            | 2                                   | Compulsory Courses                   | Electromagnetic(I)(II)                | 2            | 2   | 2              | 2                 | Compulsory Courses                   | Project of Semiconductor and Optoelectronics             | 1            | 1   | 1            | 1   |
|                                      | Basic Electronics                                       |              |     | 2            | 2                                   |                                      | Engineering Mathematics(I)(II)        | 3            | 3   | 3              | 3                 |                                      | Optoelectric Lab(II)                                     | 2            | 2   |              |     |
|                                      | Electronics Lab(I)                                      |              |     | 3            | 3                                   |                                      | Applied Electronics                   | 2            | 2   |                |                   |                                      | Semiconductor Manufacturing Technology                   | 3            | 3   |              |     |
|                                      | Introduction to Materials                               |              |     | 2            | 2                                   |                                      | Electronics Lab(II)                   | 3            | 3   |                |                   |                                      | Ethics for Engineers                                     |              |     | 2            | 2   |
|                                      |                                                         |              |     |              | Introduction to Modern Physics      |                                      | 3                                     | 3            |     |                | Laser Engineering |                                      |                                                          |              | 2   | 2            |     |
|                                      |                                                         |              |     |              | Geometrical Optics                  |                                      |                                       |              | 2   | 2              |                   |                                      |                                                          |              |     |              |     |
|                                      |                                                         |              |     |              | Optoelectric Lab(I)                 |                                      |                                       |              | 2   | 2              |                   |                                      |                                                          |              |     |              |     |
|                                      |                                                         |              |     |              | Semiconductor Materials and Devices |                                      |                                       |              | 3   | 3              |                   |                                      |                                                          |              |     |              |     |
|                                      |                                                         |              |     |              | Subtotal                            |                                      | 13                                    | 13           | 12  | 12             | Subtotal          |                                      | 6                                                        | 6            | 5   | 5            |     |
| Elective Courses                     | Introduction to Semiconductor and Optoelectric Industry | 1            | 1   |              |                                     | Elective Courses                     | Programning Language                  | 2            | 2   |                |                   | Elective Courses                     | Certification of Solid Design CAD and License Counseling | 2            | 2   |              |     |
|                                      | Basic Circuit Theory                                    | 2            | 2   |              |                                     |                                      | Vacuum Technology                     | 2            | 2   |                |                   |                                      | Computer-aided Optical System Design                     | 2            | 2   |              |     |
|                                      | Vector Analysis                                         | 3            | 3   |              |                                     |                                      | Mechanism of Optoelectronic System    | 2            | 2   |                |                   |                                      | Graphical Programming Language Design                    | 2            | 2   |              |     |
|                                      | Chinese Proficiency Test Preparation (I)                | 2            | 2   |              |                                     |                                      | CAD of Solid Design                   |              |     | 2              | 2                 |                                      | Practice of Digital Circuits                             | 2            | 2   |              |     |
|                                      | Chinese Grammar and Writing                             | 2            | 2   |              |                                     |                                      | Graphical Programming Language Design |              |     | 2              | 2                 |                                      | Thin Film Technology                                     | 2            | 2   |              |     |
|                                      | Basic Electricity and Electricity Experiment            |              |     | 2            | 2                                   |                                      | Introduction to Bio-Medicine          |              |     | 2              | 2                 |                                      | Solid State Lighting                                     | 2            | 2   |              |     |
|                                      | Photoelectric Drawing and modeling                      |              |     | 2            | 2                                   |                                      | Integrated-Circuits Engineering       |              |     | 2              | 2                 |                                      | Wave Optics                                              | 2            | 2   |              |     |
|                                      | Electronic Circuit and License Counseling               |              |     | 2            | 2                                   |                                      |                                       |              |     |                |                   |                                      | Optoelectronic Material & Device Physics                 | 2            | 2   |              |     |
|                                      | Chinese Proficiency Test Preparation (II)               |              |     | 2            | 2                                   |                                      |                                       |              |     |                |                   |                                      | Semiconductor Lab                                        |              |     | 3            | 3   |
|                                      |                                                         |              |     |              |                                     |                                      |                                       |              |     |                |                   |                                      | Materials Analysis                                       |              |     | 3            | 3   |
|                                      |                                                         |              |     |              |                                     |                                      |                                       |              |     |                |                   |                                      | Computer-aided Illumination System Design                |              |     | 2            | 2   |
|                                      |                                                         |              |     |              |                                     |                                      |                                       |              |     |                |                   |                                      | Applied Circuits in Optoelectronics                      |              |     | 2            | 2   |
|                                      |                                                         |              |     |              |                                     |                                      |                                       |              |     |                |                   |                                      | Flat Panel Display                                       |              |     | 3            | 3   |
|                                      |                                                         |              |     |              |                                     |                                      |                                       |              |     |                |                   |                                      | Optoelectronic Device and Application                    |              |     | 2            | 2   |
|                                      |                                                         |              |     |              |                                     |                                      |                                       |              |     |                |                   |                                      | Chromatics                                               |              |     | 2            | 2   |
|                                      |                                                         |              |     |              |                                     |                                      |                                       |              |     |                |                   |                                      | Optical Thin Film and Coating Technology                 |              |     | 2            | 2   |
|                                      |                                                         |              |     |              |                                     |                                      |                                       |              |     |                |                   |                                      | Optoelectronic Detection Engineering                     |              |     | 2            | 2   |
|                                      |                                                         |              |     |              |                                     |                                      |                                       |              |     |                |                   |                                      | Introduction to Optical Microelectromechanical System    |              |     | 2            | 2   |
|                                      |                                                         |              |     |              |                                     |                                      |                                       |              |     |                |                   |                                      | Semiconductor biomedical chip                            |              |     | 2            | 2   |

| 4th year(2027)                       |                                                     |              |     |              |     |
|--------------------------------------|-----------------------------------------------------|--------------|-----|--------------|-----|
|                                      | Course                                              | 1st semester |     | 2nd semester |     |
|                                      |                                                     | Cr.          | hr. | Cr.          | hr. |
| MUST Core Required Courses           |                                                     |              |     |              |     |
|                                      | Subtotal                                            | 0            | 0   | 0            | 0   |
| School Professional Required Courses |                                                     |              |     |              |     |
|                                      | Subtotal                                            | 0            | 0   | 0            | 0   |
| Compulsory Courses                   |                                                     |              |     |              |     |
|                                      |                                                     |              |     |              |     |
|                                      |                                                     |              |     |              |     |
|                                      |                                                     |              |     |              |     |
|                                      | Subtotal                                            | 0            | 0   | 0            | 0   |
| Elective Courses                     | Off-Campus Practice Training(I)(II)                 | 9            | 9   | 9            | 9   |
|                                      | Project of Semiconductor and Optoelectronics(I)(II) | 3            | 3   | 3            | 3   |
|                                      | Design and Operation of TFT-LCD Panels              | 3            | 3   |              |     |
|                                      | Creative Design in Optoelectronics                  | 3            | 3   |              |     |
|                                      | Liquid Crystal Materials and Optic                  | 3            | 3   |              |     |
|                                      | Solar Photovoltaic Technology                       | 3            | 3   |              |     |
|                                      | Computer-Assisted Design of Optical Thin Films      | 3            | 3   |              |     |
|                                      | The Measurement of Semiconductors                   | 3            | 3   |              |     |
|                                      | Micro Opto Electro Mechanical Device and System     | 3            | 3   |              |     |
|                                      | Solar-Cell-Driven LED Display                       |              |     | 3            | 3   |
|                                      | Technology Management                               |              |     | 3            | 3   |
|                                      | Semiconductor Material Analysis                     |              |     | 3            | 3   |
|                                      | Nano Bio-photonics                                  |              |     | 3            | 3   |
|                                      | Technology of Organic Light-Emitting Diode display  |              |     | 3            | 3   |
|                                      | Projection Display Technology                       |              |     | 3            | 3   |

Cr./hr.:=Credit/hour

Remarks:

- 1.Minimum graduation credits: 128 credits, including 41 elective credits (at least 29 credits for this major, the rest can be other departments).
- 2.The first, second, and third grade, students must take 16-30 credits each semester, and 9-30 credits each semester in the 4th grade.
- 3.Elective courses for listed are subject to change if necessary.
- 4.According to university regulations, students are required to meet the graduation requirement of basic proficiency and professional skills.
- 5.For off-campus internship courses, please follow the relevant implementation regulations.

