



課 綱 Course Outline  
材料科學與工程學系一般組

|  |  |                  |                  |  |     |
|--|--|------------------|------------------|--|-----|
| 中文課程名稱<br>Course Name in Chinese       | 半導體元件  |                  |                  |  |     |
| 英文課程名稱<br>Course Name in English       | Semiconductor Devices  |                  |                  |  |     |
| 科目代碼<br>Course Code                    | MS__51900  | 班 別<br>Degree    | 碩士班<br>Master' s |  |     |
| 修別<br>Type                             | 選修<br>Elective   | 學分數<br>Credit(s) | 3.0              | 時 數<br>Hour(s)   | 3.0 |
| 先修課程<br>Prerequisite                   |  |                  |                  |  |     |
| 課程目標<br>Course Objectives              |  |                  |                  |  |     |
| 讓學生在修習此一課程後，能對固態電子元件有深入的了解，以利研究工作的進行。  |  |                  |                  |  |     |
| 系教育目標<br>Dept.' s Education Objectives |  |                  |                  |  |     |
| 1                                      | 建立專業知識基礎<br>Set the professional knowledge foundation  |                  |                  |  |     |
| 2                                      | 培養專業實驗技能<br>Train the professional experimental skill  |                  |                  |  |     |
| 3                                      | 養成獨立研究能力<br>Insure capability of independent research  |                  |                  |  |     |
| 4                                      | 養成優質社會人格<br>Form the positive social character   |                  |                  |  |     |
| 5                                      | 開展國際視野<br>Develop global vision  |                  |                  |  |     |
| 系專業能力<br>Basic Learning Outcomes       |  |                  |                  | 課程目標與系專業能力相關性<br>Correlation between Course Objectives and Dept.' s Education Objectives |     |
| A                                      | 具備材料科學所需的進階物理、化學及數學的知識。<br>Acquire required advanced physical, chemical, and mathematic knowledge for materials science and engineering.                           |                  |                  | ○  |     |
| B                                      | 具備材料科學的進階專業知識，並能應用於解決工程上之問題。<br>Acquire required advanced professional knowledge for materials science and engineering, applicable in solving engineering problems |                  |                  | ●  |     |

|   |   |   |
|---|---|---|
| C | 具備獨立研究之能力。<br>Equipped with capabilities of independent research.   | ○ |
| D | 具備專業道德及責任感，與良好的溝通及團隊合作的能力。<br>Acquire professional morality and responsibility, and capability of quality communication and team cooperation. |   |
| E | 具備進階的英文能力，應用於學習與交流。<br>Acquire English capability used for learning and interaction.  | ○ |

圖示說明 Illustration：● 高度相關 Highly correlated ○ 中度相關 Moderately correlated

課程大綱  
Course Outline

本課程介紹各種固態電子元件，內容涵蓋：半導體基本特性、金屬與半導體界面、元件理論與製程簡介。

資源需求評估（師資專長之聘任、儀器設備的配合．．．等）  
Resources Required (e.g. qualifications and expertise, instrument and equipment, etc.)

以具有所開課程專長之教師擔任授課；資料整理所需之電腦、影印機；討論所需之投影機、幻燈機等教學設備

課程要求和教學方式之建議  
Course Requirements and Suggested Teaching Methods

以指定教材按預訂進度進行教學。教學以講授及討論為主，必要時以相關文獻資料加以補充。

其他  
Miscellaneous