



## 課 綱 Course Outline

### 材料科學與工程學系一般組

中文課程名稱 Course Name in Chinese	光電半導體製程									
英文課程名稱 Course Name in English	Introduction to Semiconductor Manufacturing Technology for Optoelectronics									
科目代碼 Course Code	MS_57120	班 別 Degree	碩士班 Master's							
修別 Type	選修 Elective	學分數 Credit(s)	3.0	時 數 Hour(s)	3.0					
先修課程 Prerequisite										
課程目標 Course Objectives										
After studying this course, students can have an in-depth understanding of semiconductor process technology to facilitate their research work.										
系教育目標 Dept.'s Education Objectives										
1 建立專業知識基礎 Set the professional knowledge foundation										
2 培養專業實驗技能 Train the professional experimental skill										
3 養成獨立研究能力 Insure capability of independent research										
4 養成優質社會人格 Form the positive social character										
5 開展國際視野 Develop global vision										
系專業能力 Basic Learning Outcomes					課程目標與系專業能力相關性 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。 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。 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。 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。 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。 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

Ch 1 Introduction, Ch 2 Crystal growth, Ch 3 Silicon oxidation, Ch 4 Photolithography, Ch 5 Etching, Ch 6 Diffusion, Ch 7 Ion implantation, Ch 8 Film deposition, Ch 9 Process integration, Ch 10 IC Manufacturing, Ch 11 Future trends and challenges.

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.)

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

其他  
Miscellaneous