



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	具備適當的英文能力，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