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②图玄東華大學							
教學計劃表 Syllabus							
課程名稱(中文) Course Name in Chinese	光電半導體製程	Ē		學年/學期 Academic Year/Seme	學年/學期 Academic Year/Semester		
課程名稱(英文) Course Name in English	Introduction	Introduction to Semiconductor Manufacturing Technology for					
科目代碼 Course Code	MS57120	系級 Department & Year	碩士	開課單位 Gourse-Offering Department		材料科學與工程學系	
修別 Type	選修 Elective						
授課教師 Instructor	/魏茂國						
先修課程 Prerequisite							
課程描述 Course Description							
讓學生在修習此一課程後,能對(光電)半導體相關製程科技能有深入的了解,以利研究工作的進行。							
	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.							
系專業能力 Basic Learning Outcomes					Cor	程目標與系專業能 力相關性 relation between urse Objectives and Dept.'s Education Objectives	
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,						•	

	系專業能力 Basic Learning Outcomes	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.	•
В	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.	•
С	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.	0
Е	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

## 授課進度表 Teaching Schedule & Content

週次Week	內容 Subject/Topics	備註Remarks
1	Chapter 1: Introduction	
2	Chapter 2: Crystal growth (1)	
3	Chapter 2: Crystal growth (2)	
4	Chapter 3: Silicon oxidation	
5	Chapter 4: Photolithography (1)	
6	Chapter 4: Photolithography (2)	

7	Chapter 5: Etching (1)					
8	Chapter 5: Etching (2)					
9	期中考試週 Midterm Exam					
10	校慶					
11	Chapter 6: Diffusion (1)					
12	Chapter 6: Diffusion (2)					
13	Chapter 7: Ion implantation (1)					
14	Chapter 7: Ion implantation (2)					
15	Chapter 8: Film deposition (1)					
16	Chapter 8: Film deposition (2)					
17	期末考試週 Final Exam					
18	彈性教學					
	教學策略 Teaching Strategies					
✓ 課堂講授 Lecture						
	教 學 創 新 自 評 Teaching Self-Evaluation					
創新教學(	創新教學(Innovative Teaching)					
問題導向學習(PBL) 團體合作學習(TBL) 解決導向學習(SBL)						
翻轉教室 Flipped Classroom 磨課師 Moocs						
社會責任(Social Responsibility)						
在地實踐Community Practice   產學合作 Industy-Academia Cooperation						
跨域合作(Transdisciplinary Projects)						
■ 跨界教學Transdisciplinary Teaching ■ 跨院系教學Inter-collegiate Teaching						
業師合授 Courses Co-taught with Industry Practitioners						
其它 other:						

學期成績計算及多元評量方式 Grading & Assessments									
配分項目		多元評量方式 Assessments							
Items	配分比例 Percentage	測驗 會考	實作 觀察	口頭 發表	專題 研究	創作 展演	卷宗 評量	證照 檢定	其他
平時成績(含出鉄席) General Performance (Attendance Record)	10%								出席
期中考成績 Midterm Exam	35%	>							
期末考成績 Final Exam	35%	>							
作業成績 Homework and/or Assignments	20%		~						
其他 Miscellaneous									

評量方式補充說明

Grading & Assessments Supplemental instructions

## 教科書與參考書目(書名、作者、書局、代理商、說明)

Textbook & Other References (Title, Author, Publisher, Agents, Remarks, etc.)

Gray S. May and Simon M. Sze, Fundamentals of Semiconductor Fabrication, Int'l Ed., Wiley, 2004. (歐亞書局,02-77053358,林佳璟小姐)

施敏、梅凱瑞原著,林鴻志譯,半導體製程概論,高立圖書,2016 (全華書局)

課程教材網址(含線上教學資訊,教師個人網址請列位於本校內之網址)

 $\label{thm:condition} \mbox{Teaching Aids \& Teacher's Website} (\mbox{Including online teaching information.}$ 

Personal website can be listed here.)

東華e學院

其他補充說明(Supplemental instructions)