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# ② 图言事奉上廖

		图 图 27	一十二	、学				
	教导	學計劃表	Sy	118	abus			
課程名稱(中文) Course Name in Chinese	半導體元件				學年/學期 Academic Year/Se	113/2		
課程名稱(英文) Course Name in English	Semiconductor Devices							
科目代碼 Course Code	MS51900	系級 Department & Year	t 碩士		開課單位 Course-Offering Department	材料科學與工程學系		
修別 Type	選修 Elective	學分數/時間 Credit(s)/Hour(s)			3.0/3.0			
授課教師 Instructor	/林育賢							
先修課程 Prerequisite								
	課	程描述 Cours	e Desc	ript	ion			
Modern Semiconductor Devic of modern semiconductor de appropriate for both under	evices with an o	emphasis on i	ntegra					
課程目標 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,	以利码	千究ユ	<b>工作的</b> 進			

行。

	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.	0
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.	0
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.	
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.	0

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	Introduction	
2	Semiconductor Materials, Review	
3	Semiconductor Materials, PN Junction, Review	
4	Metal-Semiconductor Junction	
5	Metal-Semiconductor Junction	

6	Metal-Semiconductor Junction					
7	清明節(放假)					
8	MOS Capacitor					
9	期中考試週 Midterm Exam					
10	MOS Capacitor					
11	MOS Capacitor					
12	MOS Capacitor					
13	Introduction to FETs					
14	High-Mobility FETs					
15	MOSFETs					
16	MOSFETs					
17	期末考試週 Final Exam					
18	彈性補充教學時間					
	教學策略 Teaching Strategies					
✓ 課堂講	授 Lecture					
✓ 其他Mis	scellaneous: 實務					
	教學創新自評 Teaching Self-Evaluation					
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						
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 othe	r:					

學期成績計算及多元評量方式 Grading & Assessments											
配分項目	配分比例 多元部						評量方式 Assessments				
Items	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(含出缺席) General Performance (Attendance Record)	30%										
期中考成績 Midterm Exam	25%										
期末考成績 Final Exam	35%										
作業成績 Homework and/or Assignments	5%										
其他 Miscellaneous (Classroom Attendance )	5%										

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.)

Textbook

Title: Modern Semiconductor Devices for Integrated Circuits

Author: Chenming Calvin Hu

#### References:

1. Solid State Electronic Devices

Author: Ben G. Streetman and S. K. Banerjee

2. Semiconductor Physics And Devices

Autior: Donald Neamen

3. Semiconductor Devices: Physics and Technology

Author: Simon M. Sze, Ming-Kwei Lee 4. Physics of Semiconductor Devices Author: Simon M. Sze, Kwok K. Ng

#### 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)

Teaching Aids & Teacher's Website(Including online teaching information.

Personal website can be listed here.)

其他補充說明(Supplemental instructions)