



教學計劃表 Syllabus

課程名稱(中文) Course Name in Chinese	薄膜技術		學年/學期 Academic Year/Semester	112/2	
課程名稱(英文) Course Name in English	Thin Film Technology				
科目代碼 Course Code	MS_31100	系級 Department & Year	學四	開課單位 Course-Offering Department	材料科學與工程學系
修別 Type	學程 Program	學分數/時間 Credit(s)/Hour(s)	3.0/3.0		
授課教師 Instructor	/陳怡嘉				
先修課程 Prerequisite					
課程描述 Course Description					
This course illustrates various techniques for thin film deposition and their background science. Student should be able to learn the vacuum system that makes the deposition process possible, and will be able to design vacuum system and the choice of pumps to meet individual deposition requirements.					
課程目標 Course Objectives					
讓學生在修習此一課程後，能對薄膜工程有基礎的認識，以利就業與研究工作的進行。 This course provides students with a fundamental understanding of thin film engineering for employment and research.					
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	Kinetic Theory of Gases 2/20				Mat. Sci.
2	Gas Transport and Pumping 2/27				Mat. Sci.
3	Vacuum Pumps 3/05				Vacuum
4	Vacuum Systems 3/12				Vacuum
5	Physics and Chemistry of Evaporation 3/19				PVD
6	Evaporation Hardwares and Processes 3/26				PVD
7	Fundamental of Plasma Physics 4/02				Plasma
8	4/09 Fundamental of Plasma Physics				
9	期中考試週 Midterm Exam 4/16				期中考
10	Fundamental of Plasma Physics 4/23				Plasma
11	Plasma Physics II 4/30				Plasma
12	Plasma Physics II 5/07				Plasma

13	Sputtering Processes 5/14	Sputtering
14	Reaction Types of Chemical Vapor Deposition 5/21	
15	Substrate Surfaces and Thin-Film Nucleation 5/28	
16	supplementary Topics 6/04	
17	期末考試週 Final Exam 6/11	期末考
18	supplementary Topics	

教學策略 Teaching Strategies

- 課堂講授 Lecture
 分組討論 Group Discussion
 參觀實習 Field Trip
 其他 Miscellaneous:

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
 磨課師 Moocs

社會責任 (Social Responsibility)

- 在地實踐 Community Practice
 產學合作 Industry-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 Items	配分比例 Percentage	多元評量方式 Assessments							
		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 General Performance	20%	✓							
期中考成績 Midterm Exam	30%	✓	✓						
期末考成績 Final Exam	40%	✓		✓	✓				
作業成績 Homework and/or Assignments	10%	✓				✓			
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.)

Milton Ohring, Materials Science of Thin Films, 2nd Ed, Academic Press, 2002.

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)