



教學計劃表 Syllabus

課程名稱(中文) Course Name in Chinese	奈米材料科技			學年/學期 Academic Year/Semester	114/1
課程名稱(英文) Course Name in English	Nanomaterials and Nanotechnology				
科目代碼 Course Code	OE_52400	系級 Department & Year	碩士	開課單位 Course-Offering Department	光電工程學系
修別 Type	選修 Elective	學分數/時間 Credit(s)/Hour(s)		3.0/3.0	
授課教師 Instructor	/徐裕奎				
先修課程 Prerequisite					
課程描述 Course Description					
本課程探討不同維度的奈米結構之物理、化學及光電特性，以及相關奈米製成技術原理之介紹。					
課程目標 Course Objectives					
本課程探討不同維度的奈米結構之物理、化學及光電特性，以及相關奈米製成技術原理之介紹					
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	具有獨立研究能力Equipped with abilities of independent research.				○
B	具有光電工程的專業知識及應用能力。Professional knowledge and application ability of Opto-electronic engineering				●
C	具有設計與執行實驗、報告撰寫與數據解釋之能力。Abilities to design and execute experiment, write reports, and explain data				
D	使用儀器進行物件的分析及測試。Analysis and test of devices by instruments				
E	具備適當的英文能力，應用於學習與交流。English language ability to study and interact				●
F	具有良好的溝通與團隊合作的能力。Ability to communicate and teamwork				○
G	具有創新思維及終身學習的能力。Creative thinking and life-long learning ability				●
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	Overview				
2	Introduction to Nanomaterials and Nanotechnology				
3	Physical Chemistry of Solid Surface (I)				
4	Physical Chemistry of Solid Surface (II)				
5	0-dimentional Nanostructures				

6	0-dimensional Nanostructures	
7	1-dimensional Nanostructures	
8	1-dimensional Nanostructures	
9	期中考試週 Midterm Exam	
10	2-dimensional Nanostructures	
11	2-dimensional Nanostructures	
12	Special Nanomaterials	
13	Special Nanomaterials	
14	Applications for Solar Cells	
15	期末報告 Paper report	
16	期末報告 Paper report	
17	期末考試週 Final Exam	
18	教師彈性補充教學	

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(含出缺席) General Performance (Attendance Record)	10%								
期中考成績 Midterm Exam	30%								
期末考成績 Final Exam	30%								
作業成績 Homework and/or Assignments									
其他 Miscellaneous (期末報告)	30%								
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: "Nanostructures and Nanomaterials: Synthesis, Properties and Applications", Guozhong Cao, (MSE, University of Washington, USA) Imperial College Press, London, UK, April 2004.									
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.)									
e學院									
其他補充說明 (Supplemental instructions)									