



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	113/1
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
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-dimensional 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 General Performance	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)