國立東華大學

教學計劃表　Syllabus

課程名稱(中文) Course Name in Chinese	固態光學			學年/學期 Academic Year/Semester	112/1
課程名稱(英文) Course Name in English	Optical properties of solid				
科目代碼 Course Code	OE__52000	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	/林伯彥				
先修課程 Prerequisite					

課程描述　Course Description

闡述光在半導體，金屬，絕緣體中的光學特性

課程目標　Course Objectives

固體的光學性質是探導光與固態物質交互作用的基礎理論課，通過本課程的學習，要求掌握固體中光學性質的基本理論，為從事凝態光學的研究、教學和工程應用等工作打好理論基礎。

	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	Introduction of course and rule of grading	
2	syllabus	
3	Brief review of EM theory	
4	Brief review of EM theory	

5	Optical Properties of Condensed Matters	
6	Optical Properties of Condensed Matters	
7	Oscillation model: Lorentz model	
8	Oscillation model: Lorentz model	
9	Midterm Exam	
10	Oscillation model: Drude model	
11	Oscillation model: Drude model	
12	Oscillation model: Drude model	
13	Optical properties of semiconductors	
14	Optical properties of semiconductors	
15	Optical properties of semiconductors	
16	Luminescence centres	
17	Luminescence centres	
18	Final Exam	

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 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 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	30%		✓						
期中考成績 Midterm Exam	20%			✓					
期末考成績 Final Exam	20%	✓							
作業成績 Homework and/or Assignments	30%				✓				
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.)

Optical properties of solids, M. Fox, Oxford
Semiconductor optics, C. Klingshirn, Springer
Waves in metamaterials, L. Solymar, Oxford

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)

課程進度依實際上課狀況做調整