



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	115/1	
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、永續發展及終身學習的能力。Creative thinking, sustainable development, and lifelong 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	期末考試週 Final Exam	

彈性 教學 規劃 Flexible Teaching Plan	<p>請勾選(至少需勾選1 個項目): Please tick the box(es). (At least one item is required.):</p> <p><input type="checkbox"/> 問題討論 Problem-based Discussion</p> <p><input type="checkbox"/> 翻轉教學 Flipped Classroom</p> <p><input type="checkbox"/> 展演實作 Performance / Practical Presentation</p> <p><input type="checkbox"/> 校外參訪 Off-campus Visit</p> <p><input type="checkbox"/> 講座活動 Lecture / Seminar</p> <p><input checked="" type="checkbox"/> 線上作業 Online Assignments</p> <p><input checked="" type="checkbox"/> 自主學習 Self-directed Learning</p> <p><input type="checkbox"/> 課業輔導 Academic Support</p> <p><input type="checkbox"/> 實驗操作 Experiment Operation</p> <p><input type="checkbox"/> 遠距教學(同步) Distance Learning (Synchronous)</p> <p><input type="checkbox"/> 遠距教學(非同步) Distance Learning (Asynchronous)</p> <p><input type="checkbox"/> 其他(請填寫) Others (Please specify.):</p> <p>備註: 本校學期週數自115 學年度起調整為17 週, 為符合1學分18 小時之原則, 請教師規劃安排彈性教學。 Note: From the 115th academic year, the semester will be 17 weeks. Please include flexible teaching activities to meet the required 18 hours per credit.</p>
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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)	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