



教學計劃表 Syllabus

課程名稱(中文) Course Name in Chinese	近代光學AA			學年/學期 Academic Year/Semester	114/1
課程名稱(英文) Course Name in English	Modern Optics				
科目代碼 Course Code	PHYS3010AA	系級 Department & Year	學三	開課單位 Course-Offering Department	物理學系
修別 Type	學程 Program	學分數/時間 Credit(s)/Hour(s)		3.0/3.0	
授課教師 Instructor	/馬遠榮				
先修課程 Prerequisite					
課程描述 Course Description					
介紹近代光學與實際光學相關技術，增進學生對近代光學與技術的了解					
課程目標 Course Objectives					
增進學生對近代光學領域的瞭解與興趣，培養獨立思考，邏輯判斷，解決近代光學問題的能力，從普物中幾何光學的概念演伸至古典光學的波動、極化、干涉、繞射，進而探討近代光學的重要理論。					
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	具備物理之基礎背景知識Possessing fundamental knowledge in physical sciences.				●
B	能運用基本物理知識與邏輯推理，分析解決物理問題Being able to analyze and solve physics problems based on basic knowledge in physics as well as logical reasoning.				●
C	對目前測量器材有基礎認識，且具有操作物理實驗儀器的能力Being acquainted with modern equipment and being able to operate them for performing physics experiments.				
D	能使用基礎電腦程式語言解決物理問題Being able to use basic computer programming for solving physics problems.				
E	善用各種資訊平台進行論文資料蒐集的能力Being able to use various platforms for data collection benefiting a topical research.				
F	具備科技發展的國際視野以及外語溝通的能力Having an international view of the technology developments and being able to use a foreign language for communications				
G	能整合物理與其它領域知識Being able to integrate the knowledge of physics with that of other fields.				
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	請假代理				
2	Ch.1. Wave Motion				
3	Ch.2. Electromagnetic Waves				
4	教師節				

5	中秋節	
6	Ch. 3. Electromagnetic Theory	
7	Ch. 4. Propagation of Light	
8	第一次期中考	
9	Ch. 5. Geometrical Optics I	
10	Ch. 6. Geometrical Optics II	
11	Ch. 7. Superposition of Waves I	
12	Ch. 8. Superposition of Waves II	
13	第二次期中考	
14	Ch. 9. Polarization	
15	Ch. 10. Interference	
16	Ch. 11. Diffraction	
17	期末考	
18	複習	

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	60%						✓		
期末考成績 Final Exam	30%	✓					✓		
作業成績 Homework and/or Assignments									
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.)									
Eugene Hecht, Optics 5th Edition (Global Edition), Pearson									
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)									