國立東華大學

教學計劃表 Syllabus

課程名稱(中文) Course Name in Chinese	近代光學AB			學年/學期 Academic Year/Semester	112/2
課程名稱(英文) Course Name in English	Modern Optics				
科目代碼 Course Code	PHYS3010AB	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、干射、繞射，進而探討進代光學的重要理論。

	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	本學期課程說明	
2	Ch1. Wave Motion	
3	Ch2. Electromagnetic Waves	
4	Ch3. Electromagnetic Theory	

5	Ch4. Propagation of light	
6	Ch5. Geometrical Optics I	
7	第一次期中考	
8	春假	
9	Ch6. Geometrical Optics II	
10	Ch7. Superposition of Waves I	
11	Ch8. Superposition of Waves II	
12	第二次期中考	
13	Ch9. Polarization	
14	Ch10. Interference	
15	Ch11. Diffraction	
16	期末考試週 Final Exam	
17	端午節	
18	期末解答	

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(含出缺席) General Performance (Attendance Record)	0%								
期中考成績 Midterm Exam	60%								
期末考成績 Final Exam	30%								
作業成績 Homework and/or Assignments	10%								
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.)

教科書: 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)