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②國玄東華大學

教學計劃表 Syllabus

Cour	課程名稱(中 se Name in		雷射物理AA				學年/學期 nic Year/Sem	ester	113/2	
Cour	課程名稱(英文) Course Name in English Laser Physics									
科目代碼 Course Code			PHYS3090AA	系級 Department 學三 & Year		Course-	開課單位 Course-Offering Department		物理學系	
修別 Type 學程 Program Page Program Credit(s)/Hour(s) 3.0/3.						0/3.0	.0			
	授課教師 Instructor /賴建智									
	先修課程 Prerequisite									
課程描述 Course Description										
介紹基礎光學知識與雷射原理,訓練學生具有各種雷射,光譜等相關基本概念.										
課程目標 Course Objectives										
簡介雷射的發光原理、雷射系統的基本架構、工作原理和特性,以及雷射調變技術:如脈衝壓縮技術等。在雷射光學部分則介紹雷射光束的傳播理論及匯聚特性。										
課程目標與系專業的 力相關性 Correlation betwee Course Objectives Basic Learning Outcomes and Dept.'s Education Objectives								力相關性 relation between urse Objectives and Dept.'s Education		
A			Possessing fundam						•	
В	physics prob	lems based	髯推理,分析解決物 on basic knowled	lge in physics	as well a	s logical	reasoning.		•	
世里的测量器材有基礎認識,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.								0		
b 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.								0		
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.								0		
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									0	
6 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							1	備註Remarks		
1	Intro	Introduction							◎2/17(一)開學	
2	2 Elect	Electromagnetic Theory						©2/28	◎2/28 (五) 放假	
3 Electromagneti			Theory							

5	Propagation of Laser Beams						
6	Light Propagation in Matters						
7	Light Propagation in Matters	◎4/3 (四), 4/3 (五) 放假					
8	Optical Resonators	◎4/7 (一) 放假					
9	期中考試週	◎期中考週					
10	10 Optical Resonators						
11	Interaction of Radiation and Atomic Systems						
12	12 Laser Oscillation						
13	13 Laser Oscillation						
14	14 期末報告						
15	期末報告	◎5/30 (五) 放假					
16	期末報告						
17	期末報告	◎期末考週					
18							
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							
社會責任(Social Responsibility)							
■ 在地實踐Community Practice ■ 産學合作 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	配分比例 Percentage	多元評量方式 Assessments							
Items		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)									
期中考成績 Midterm Exam									
期末考成績 Final Exam	100%	>		~					Class Exam or Oral Presentation
作業成績 Homework and/or Assignments									
其他 Miscellaneous (Attendance)									

評量方式補充說明

Grading & Assessments Supplemental instructions

- *無期中/期末考補考(正當理由並檢附證明除外)。
- *請假須遵守校規,並依規定附上正式證明辦理。
- *所有考試成績均不得為個位數或0分,違者總成績為不及格。
- *口頭報告須按規定作報告,違者總成績為不及格。
- *本課程不使用麥克風。
- *授課週次安排依實際課堂進度為主。
- *所有課堂上所宣達事項(含口頭報告與考試日期之規則及日期),不另於e學苑重複公佈,亦不另回覆各別email。
- *上述所有事項,修課視為同意,不得事後異議。

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: Photonics: Optical Electronics in Modern Communications by Amnon Yariv (Author), Pochi Yeh (Author), Oxford University Press; 6 edition (January 26, 2006)

References: [1] Optics by Eugene Hecht, Addison-Wesley; 4 edition (August 12, 2001)

[2] Lasers, by Anthony E. Siegman, University Science Books; New edition edition (May 1,

1986)

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)