



課 綱 Course Outline
物理學系應用物理碩士班一般組

中文課程名稱 Course Name in Chinese	量子力學(一)				
英文課程名稱 Course Name in English	Quantum Mechanics (I)				
科目代碼 Course Code	APH_50500	班 別 Degree	碩士班 Master' s		
修別 Type	必修 Required	學分數 Credit(s)	3.0	時 數 Hour(s)	3.0
先修課程 Prerequisite					
課程目標 Course Objectives					
介紹量子力學的基本概念、原理、計算與應用，增進對近代物理的認識與瞭解。					
系教育目標 Dept.' s Education Objectives					
1	培養具有研發能力的高科技人 Essential training of professionals for research and development knowledge-intensive industries.				
2	培養繼續進修的物理人才 Inspiring young people to take a higher education program in physics.				
3	厚植本系所及理工學院之教學與研究水準 Promoting the teaching and researching potential of the department and the college				
4	培養物理專業研究人才 Professional training in physics research.				
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	具備物理與相關應用領域之專業知識 Possessing professional knowledge in physics and related application fields.			●	
B	能以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	瞭解當代實驗儀器之原理，並具備操作實驗儀器之能力 Understanding the principles of up-to-date equipment and being able to operate them for performing physics experiments.				

D	能利用電腦處理各類物理問題 Being able to use computers for solving various physics problems.	
E	對學術倫理有清楚正確之認知 Properly and clearly acknowledging the academic ethics.	
F	具備以口頭報告及論文寫作發表研究成果之能力 Possessing the skills of oral presentation and scientific writing for publishing research findings.	
G	具備科技發展之國際觀及外語溝通能力 Having an international view of the technology developments and being able to use a foreign language for communications.	

圖示說明 Illustration : ● 高度相關 Highly correlated ○ 中度相關 Moderately correlated

課程大綱 Course Outline

1. Mathematical Foundation of Quantum Mechanics
2. Quantum Kinematics
3. Quantum Dynamics
4. One-Dimensional Problems
5. Theory of Angular Momentum
6. Three-Dimensional Problems

資源需求評估 (師資專長之聘任、儀器設備的配合 . . . 等)
Resources Required (e.g. qualifications and expertise, instrument and equipment, etc.)

具有各領域之專業師資、相關期刊及圖書、影印機、投影機、幻燈機。

課程要求和教學方式之建議 Course Requirements and Suggested Teaching Methods

講授、課堂及課後討論、作業、隨堂考試、期中考、期末考。

其他 Miscellaneous

相較於量子物理(一)、(二)，本課程是其延伸，將更偏重於數學的使用