

物理研究所跨域模組課程必修科目表 (B) The Compulsory Course List for Cross-Disciplinary Program in Institute of Physics (B)

類別 Category	科目名稱 Name of course	學分 Credits	開課系 所 Offered by	備註 Remark
本所跨域模組 (30 學分) Cross-disciplinary program module curriculum at Our Institute (30 credits) 修畢於畢業證書加註『跨域專長：物理』 It could be remarked as “Cross-disciplinary Specialty: Physics” on the diploma after the module curriculum is completed.	第一階段 Stage 1 右列四擇一 Choose one out of the four from the right 詳見備註 See remarks	物理數學(一)/物理數學(二) Mathematical Physics (I) / Mathematical Physics (II)	3/3 物理所 IOP	1. 來自工數、應數非必修的科系。 From a department where Engineering Mathematics and Applied Mathematics are not compulsory courses.
		應用數學(一)/應用數學(二) 或微積分之外的 2 學期數學相關課程 Applied Mathematics (I) / Applied Mathematics (II) or two engineering mathematic courses above calculus	3/3 電物系 DEP 工學院 COE 電機學院 ECE	
		近代物理(一)/近代物理(二)/ <u>*核心課程/*核心課程</u> (4 門課中擇 2 修習) Modern Physics (I) / Modern Physics (II) / <u>*core curriculum / *core curriculum</u> (choose two out of four)	3/3 物理所 IOP	1. 來自工數、應數為必修的科系與應數系學生。 Students from a department where Engineering Mathematics or Applied Mathematics are compulsory courses. From Department of Applied Mathematics. 2. 修過電物系近代物理(一)(二)得申請抵免。 A credit waiver may be granted for students who have taken Modern Physics (I) and (II) in the Department of Electrophysics.
		<u>近代物理(一)/近代物理(二)/物理化學(二)/<u>*核心課程</u></u> (4 門課中擇 2 修習) <u>Modern Physics (I) / Modern Physics (II) / Physical Chemistry (II) / *core curriculum</u> (choose two out of four)	3/3 <u>物理所 IOP</u>	1. <u>來自生科系與應化系學生。 From Department of Biological Science and Technology and Department of Applied Chemistry.</u> 2. <u>修過電物系近代物理(一)(二)、生科系物理化學(二)得申請抵免。 A credit waiver may be granted for students who have taken Modern Physics (I) & (II) in the Department of Electrophysics and Physical Chemistry (II) in Department of Biological Science and Technology.</u>
必修	經典物理(一)/經典物	3/3	物理所	力學、電磁學、 <u>熱力學</u> 、特殊相對

		compulsory courses	理(二) Classical Physics (I) / Classical Physics (II)		IOP	論等 Mechanics, Electromagnetics, <u>Thermodynamics</u> , Special Relativity
	第二階段 Stage 2	右列 二擇一 Choose one out of the two from the right	量子力學(一)/量子力 學(二) Quantum Mechanics (I) / Quantum Mechanics (II) 進階實驗(一)/ <u>*核心課 程</u> 或 進階實驗(一)/ (二) Advanced Lab (I)/ <u>*core curriculum</u> or Advanced Lab (I)/(II)	3/3 3/3	物理所 IOP	1. <u>來自工數、應數非必修的科系。From a department where Engineering Mathematics and Applied Mathematics are not compulsory courses.</u> 2. <u>來自工數、應數為必修的科系與應數系學生。Students from a department where Engineering Mathematics or Applied Mathematics are compulsory courses. From Department of Applied Mathematics.</u>
		詳見備 註 See remarks	<u>生物物理學/非平衡統計專題</u> <u>Biophysics/ Topics in Non-Equilibrium Statistics</u> <u>原子分子物理(一)/統計力學(一)</u> <u>Atomic Molecular Physics (I)/ Statistical Mechanics (I)</u>	<u>3/3</u> <u>3/3</u>	<u>物理所</u> <u>IOP</u>	<u>來自生科系與應化系學生。From Department of Biological Science and Technology and Department of Applied Chemistry.</u>
	第三階段 Stage 3	必修 compulsory courses	專題研究論文(一)/專 題研究論文(二) Topic Research and Thesis (I) / Topic Research and Thesis (II)	3/3	物理所 IOP	
總學分 (30 學分)			Total credits (30 credits)			

一、物理研究所跨域模組之*核心課程：統計力學(一)、固態物理(一)(二)、粒子物理(一)、電動力學(一)(二)、古典力學、量子場論(一)、原子分子物理(一)、廣義相對論、宇宙學簡介、計算物理、數值分析。

1. *Core curriculum for the cross-disciplinary program of Institute of Physics: Statistical Mechanics (I), Solid State Physics (I) and (II), Particle Physics (I), Electrodynamics (I) and (II), Classical Mechanics, Quantum Field Theory (I), Molecular Physics (I), General Relativity, Introduction to Cosmology, Computational Physics and Numerical Methods for Physics.

二、擋修(先修)規定：所有課程必須先修過基礎(一)的課程，才能再選修進階(二)的課程。

2. Prerequisite requirement: For all the courses, the fundamental course which is marked as (I) shall be taken before the advanced course which is marked as (II).