

國立高雄師範大學
National Kaohsiung Normal University
 物理學系碩士班開課系統表
 Curriculum for the Master's Program, Department of Physics

115 學年度入學生適用
 Applicable to students enrolled Fall 2026 and later

學年 Year 科目 Subject	第一學年 Year 1			第二學年 Year 2		
	科目 Subject	學分 Credit		科目 Subject	學分 Credit	
		第一學期 Semester 1	第二學期 Semester 2		第一學期 Semester 1	第二學期 Semester 2
必修 Required Courses	書報討論(一) Seminar (I)	1				
	書報討論(二) Seminar (II)		1			
	論文 Thesis	3, 3				

選修 Elective Courses 不分學年 開課	專題演講(一) Topic Speech (I)	1	專題演講(二) Topic Speech (II)	1
	科學教師教學特性研究 Studies in Physics Teacher Characteristics	2	科學教育哲學 Philosophy of Science Education	2
	認知科學專題研究 Special Topics in Cognitive Science	2	認知科學與科學教育研究 Special Topics in Cognitive Science and Science Education	2
	科學教學理論及模式 Theory and Model of Science Teaching	2	詮釋學與科學教育 Hermeneutics and Science Education	2
	認知心理學專論 Special Topics in Cognitive Psychology	2	遠距教學與科學教育 Distance Education and Science Education	3
	科學師資評鑑 Science Teacher Evaluation	3	物理概念研究 Studies in Physics Concept	3
	科學教育研究法 Research Methods in Science Education	3	科學史原典選讀 Text Reading on the History of Science	3
	科學教育期刊論文批判 Criticism of Science Educational Periodicals	3	科學活動設計研究 Studies in the design of scientific activity	3
	科教質的研究方法 Qualitative Research Method in Science	3	科教量的研究方法 Quantitative Research Method in Science	3
	質的研究 Qualitative Research	3	科學活動設計實務 Practice in the design of scientific activity	3
	中學物理課程設計 Secondary School Physics Curriculum Design	3	科學哲學 Philosophy of Science	3
	物理教材研究 Studies in Subject Matter in Physics	3	科學問題解決研究 Studies in Science Problem Solving	3
	物理教育研究法 Methods of Physics Education	3	科學教育評量與評鑑 Measurement and Evaluation in	3

Research		Science Education	
中學物理課程發展 Secondary School Physics Curriculum	3	認知心理學與科學教育 Cognitive Psychology and Science Education	3
物理教育研究 Studies in Physics Education	3	科學創造力教與學研究 Studies in Teaching and Learning of Scientific Creativity	3
物理教法研究 Studies in Teaching Method in Physics	3	科學創造力評鑑專題研究 Studies in Evaluation of Scientific Creativity	3
科學教育哲學專論 Special Topics in the Philosophy of Science Education	3	認知取向本體論專題研究 Studies in Ontology of Cognitive Perspective	3
物理教具製作 Design and Construction of Physics Teaching Aids	3	物理教具概論 Introduction to Physics Teaching Aids	3
物理學習研究 Studies in Physics Learning	3	科學思考與過程 Thinking and Processes : Science	3
科教原理 Principles of Science Education	3	電腦與物理 Computer in Physics	3
科學史哲與科學教育專題研究 Studies in the History and Philosophy of Science and Science Education	3	物理教學評量 Teaching Evaluation in Physics	3
自然科學發展史 History of Natural Science	3	物理教學研究 Studies in Teaching in Physics	3
自然科學發展史(一) History of Natural Science (I)	3	自然科學發展史(二) History of Natural Science (II)	3
物理教材教法(一) Subject Matter and Teaching Methods in Physics (I)	3	物理教材教法(二) Subject Matter and Teaching Methods in Physics (II)	3
物理教育統計(一) Statistics in Physics Education (I)	3	物理教育統計(二) Statistics in Physics Education (II)	3
物理發展史(一) Development of Physics History (I)	3	物理發展史(二) Development of Physics History (II)	3
網際網路教學系統設計研究 Design Research on Internet Teaching System	3	初階理論物理 Theoretical Physics Minimum	3
古典力學 Classical Mechanics	3	高等古典力學 Advanced Classical Mechanics	3
電動力學 Electrodynamics	3	高等電動力學 Advanced Electrodynamics	3
統計力學 Statistical Mechanics	3	高等統計力學 Advanced Statistical Mechanics	3
統計力學研討 Recitation in Statistical Mechanics	3	統計力學研究 Studies in Statistical Mechanics	3
量子力學 Quantum Mechanics	3	高等量子力學 Advanced Quantum Mechanics	3
量子力學研討 Recitation in Quantum Mechanics	3	量子力學研究 Studies in Quantum Mechanics	3
X 光繞射 X-Ray Diffraction	3	X 光繞射研討 Recitation in X-Ray Diffraction	3
X 光繞射研究 Studies in X-Ray Diffraction	3	生物物理 Biophysics	3
固態物理導論 Introduction of Solid State Physics	3	半導體物理及元件 Semiconductor Physics and Electronic Devices	3

固態物理 Solid State Physics	3	固態元件物理 Physics of Solid State Device	3
固態物理研討 Recitation in Solid State Physics	3	固態物理研究 Studies in Solid State Physics	3
計算固態物理 Computational Solid State Physics	3	計算固態物理專論 Topics in Computational Solid State Physics	3
統計物理導論 Introduction to Statistical Physics	3	計算物理導論 Introduction to computational physics	3
光學系統學 Optical System	3	光學系統設計 Optical System Design	3
光纖光學 Fiber Optics	3	光學系統設計專論 Topics in Optical System Design	3
量子光學 Quantum Optics	3	傅氏光學 Fourier Optics	3
光電子學概論 Introduction to Optoelectronics	3	光電子學 Optoelectronics	3
光電半導體 Optoelectronic Semiconductor	3	光電量測 Optoelectronic Measurement	3
光電研討 Recitation in Optoelectronics	3	光電研究 Studies in Optoelectronics	3
雷射物理 Laser Physics	3	雷射物理應用 Application of Laser Physics	3
雷射動力學導論 Introduction to Laser Dynamics	3	雷射動力學研討 Recitation in Laser Dynamics	3
雷射動力學研究 Research in Laser Dynamics	3	雷射動力學應用 Application to Laser Dynamics	3
固態雷射 Solid State Lasers	3	機率與統計導論 Introduction to probability and statistics	3
粒子物理導論 Introduction to particle physics	3	粒子探測與數據擷取 Particle detection and Data acquisition	3
粒子物理(一) Particle Physics (I)	3	粒子物理(二) Particle Physics (II)	3
粒子物理研討 Recitation in Particle Physics	3	粒子物理研究 Studies in Particle Physics	3
奈米科技 Nanotechnology	3	奈米科技導論 Fundamentals of Nanotechnology	3
奈米物理研究 Studies in Nanophysics	3	奈米光電研究 Studies in Nano-Optoelectronics	3
原子物理 Atomic Physics	3	原子分子物理 Atomic and Molecular Physics	3
核子物理 Nuclear Physics	3	梅斯堡光譜研究 Studies in Mossbauer Spectra	3
磁性物理 Magnetism Physics	3	磁性物理研討 Recitation in Magnetism	3
磁學 Magnetism	3	磁性物理研究 Studies in Magnetism	3
磁性材料 Magnetic Materials	3	新穎材料物理導論 Introduction to Meta-materials Physics	3
材料科學研究(一) Studies in Materials Science (I)	3	材料科學研究(二) Studies in Materials Science (II)	3
液態晶體研討 Recitation in Liquid Crystals	3	液態晶體研究 Studies in Liquid Crystals	3

高溫超導 High TC Superconductivity	3	超導物理 Physics of Superconductivity	3
高溫超導研討 Recitation in High TC Superconductivity	3	高溫超導研究 Studies in High TC Superconductivity	3
表面物理(一) Surface Physics (I)	3	表面物理(二) Surface Physics (II)	3
薄膜及表面分析技術 Thin Film and Surface Analysis Technology	3	拓模絕緣體導論 Introduction to Topological Insulators	3
薄膜物理導論 Introduction of Thin Film Physics	3	薄膜物理 Thin Film Physics	3
薄膜物理研討 Recitation in Physics in Thin Film	3	薄膜物理研究 Studies in Physics in Thin Film	3
凝態物理導論 Introduction of Condensed Matter Physics	3	凝態物理專論 Topics in Condensed Matter Physics	3
宇宙學導論 Introduction to Modern Cosmology	3	天文物理 Astrophysics	3
拉曼光譜研究(一) Studies in Raman Spectra (I)	3	拉曼光譜研究(二) Studies in Raman Spectra (II)	3
相對論 Relativity	3	弦論導論 Introduction to String Theory	3
近代物理學研討(一) Recitation in Modern Physics (I)	3	近代物理學研討(二) Recitation in Modern Physics (II)	3
量子場論(一) Quantum Field Theory (I)	3	量子場論(二) Quantum Field Theory (II)	3
超晶格研究(一) Studies in Superlattices (I)	3	超晶格研究(二) Studies in Superlattices (II)	3
電腦與物理應用 Application to Computer in Physics	3	電磁波模擬 Electromagnetic Waves Simulation	3
數值模擬導論(一) Introduction to Numerical Simulation (I)	3	數值模擬導論(二) Introduction to Numerical Simulation (II)	3
自旋電子學 Spintronics	3	自旋電子學導論 Introduction to Spintronics	3
高能實驗物理 Experimental High Energy Physics	3	當代高能實驗研討 Contemporary Experimental High-Energy Physics Projects	3
非線性光學 Nonlinear Optics	3	非線性動力學 Nonlinear Dynamics	3
非線性光學研討 Recitation in Nonlinear Optics	3	非線性動力學研討 Recitation in Nonlinear Dynamics	3
非線性光學研究 Studies in Nonlinear Optics	3	非線性動力學研究 Studies in Nonlinear Dynamics	3
高等非線性動力學 Advanced Nonlinear Dynamics	3	複雜系統導論 Introduction to Complex System	3
複雜系統 Complex System	3	複雜系統動力學 Complex System Dynamics	3
複雜訊號分析 Analysis of Complex Signals	3	複雜訊號分析應用 Application to Analysis of Complex Signals	3
經濟物理學導論 Introduction to Econophysics	3	經濟物理學應用 Applied Econophysics	3
類神經網路理論 Theory of Artificial Neural Network	3	類神經網路應用 Application of Artificial Neural	3

			Network	
	混沌控制與同步 Chaotic Control and Synchronization	3	混沌電路設計 Chaotic Circuit Design	3
	當代主題物理導論 Topics in Modern Physics	3	資料科學與機器學習 Data science and Machine learning	3
備註 Remarks	<p>1. 畢業學分：24 學分(必修 2 學分，選修 22 學分)。論文不列入畢業學分。</p> <p>2. 書報討論(一)、(二)為不具階段性課程，無須依序修讀。</p> <p>3. 碩士班學生申請修習本系博士班課程，需經指導教授同意後續送系務會議審議，得採認為碩士班畢業選修學分。所選修之博士班課程若已計入碩士班畢業學分數計算，不得再申請抵免博士班學分數。</p> <p>1. Graduation Credits: 24 Credits. Required Courses: 2, Elective Courses: 22. Thesis is not included in the graduation credits.</p> <p>2. Seminar (I) and Seminar (II) are not staged courses, and need not to be studied in order.</p> <p>3. Master's program students who apply to take doctoral-level courses offered by this department must obtain the consent of their academic advisor, after which the application shall be submitted to the departmental affairs meeting for review. Upon approval, such courses may be recognized as elective credits toward the master's degree graduation requirements. If a doctoral-level course has already been counted toward the master's degree graduation credit requirements, it may not be applied again for credit transfer toward the doctoral degree.</p>			