

國立金門大學 電機工程學系學士班 課程規劃表

National Quemoy University Bachelor's Program –Department of Electrical EngineeringI Program Curriculum Plan

115學年度入學新生適用

Applicable for students Admitted in Academic Year 2026

本學系學生畢業時至少應修滿 <u>132</u> 學分，包括 Graduation Requirement: A minimum of 132 credits, including:		修訂歷程 Revision History	
共同必修 <u>8</u> 學分 General Core Curriculum: 8	通識課程 <u>16</u> 學分 General Education Courses: 16 credits	115年3月18日114學年度第2學期第一次系課程規劃委員會訂定通過 Approved on March 18, 2026, during the 1st Departmental-level Curriculum Planning Committee Meeting of the 1st Semester, Academic Year 2025 115年4月15日114學年度第2學期第一次院課程規劃委員會訂定通過 Approved on April 15, 2026, during the 1st college-level Curriculum Planning Committee Meeting of the 2nd Semester, Academic Year 2025 115年0X月XX日114學年度第2學期第X次校級課程規畫委員會訂定通過 Approved on June 5, 2026, during the 1st school-level Curriculum Planning Committee Meeting of the 2nd Semester, Academic Year 2025	
院必修 <u>6</u> 學分 College Required Courses: 6 credits	系必修 <u>55</u> 學分 Department Required Courses: 55 credits		
專業選修 <u>47</u> 學分(包括 <u>12</u> 學分可選修非本學系所開設之課程) Professional Electives: 47 credits (including up to 12 credits from other departments)			

		一年級		二年級		三年級		四年級		四年合計											
		First Year	Semester	Semester	Second Year	Semester	Semester	Third Year	Semester	Semester	Fourth Year	Semester	Semester	Total							
		學分	時數	學分	時數	學分	時數	學分	時數	學分	時數	學分	時數	學分	時數	學分	時數				
		Cr	Hr	Cr	Hr	Cr	Hr	Cr	Hr	Cr	Hr	Cr	Hr	Cr	Hr	Cr	Hr				
共同必修 General Required Courses	通識 General Education	依本校「學生修習通識教育課程辦法」規定。Follow the university's "General Education Curriculum Guidelines" – 16 credits														16					
	體育 Physical Education	依本校「體育課程實施辦法」規定。Follow the university's "Physical Education Curriculum Guidelines" – 0 credit														0					
	國文(一) Chinese I	2	2														8				
	英文(一) English I	2	2																		
	國文(二) Chinese II			2	2																
	英文(二) English II			2	2																
共同必修總計																24					
專業必修 Professional Required Courses	院必修 College Required Courses	微積分(一) Calculus I	3	3																	
		計算機概論 Introduction to computer science	3	3																	
	院必修總計		6				0	0		0	0		0	0		6					
	系必修 Department Required Courses	普通物理實驗(一) Physics Experiments I	1	3			電子電路實習(一) Microelectronic Circuits Experiments	1	3		通訊原理 Principles of Communications	3	3		專題製作(三) Senior Project III	2	2				
		普通物理學(一) Physics I	3	3			電子學(一) Microelectronic Circuits I	3	3		信號與系統 Signals and Systems	3	3								
		數位邏輯 Digital logic	3	3			電路學(一) Electronic circuits I	3	3		專題製作(一) Senior Project I	2	2								
		材料科學與工程導論(一) Introduction to Materials Science and Engineering I	3	3			工程數學(一) Engineering Mathematics I	3	3		專題製作(二) Senior Project II		2	2							
		微積分(二) Calculus II			3	3	電子電路實習(二) Microelectronic Circuits Experiments II		1	3											
		普通物理學(二) Physics II			3	3	電子學(二) Microelectronic Circuits II			3	3										
		普通物理實驗(二) Physics Experiment II			1	3	電路學(二) Electronic Circuits II			3	3										
		程式設計 Program Design			3	3	工程數學(二) Engineering Mathematics II			3	3										
							電磁學 Electromagnetics			3	3										
	系必修總計		10		10		10	13		8	2		2	0		55					
	專業必修總計		16		10		10	13		8	2		2	0		61					
專業選修 Professional Electives Courses	共同選修 General Professional Electives	資訊科技認證(一) Information Technology Certification I	2	2					電子學(三) Microelectronic Circuits III	3	3		專題研究(一) Directed Research I	2	2						
		資訊科技認證(二) Information Technology Certification II			2	2			科技新聞導讀 Science news reading	2	2		工程倫理 Engineering Ethics	3	3						
								科技新聞翻譯 Science news translation			2	2	校外專業實習(一) Extramural Practicum I	4	4						
								線性代數 Linear Algebra			3	3	專題研究(二) Directed Research II			2		2			
												企業實務培訓 Enterprises Practical Training			3	3					
	通訊與系統應用領域 Communication and System Application												校外專業實習(二) Extramural Practicum II			4	4				
		數位邏輯實習 Digital logic internship			3	3	工程模擬軟體 Engineering Simulation Software	3	3	數值分析 Numerical Analysis	3	3		數位影像處理 Digital Image Processing	3	3					
		數位系統設計 Digital System Design			3	3	物件導向程式設計 Object-Oriented Programming	3	3	嵌入式系統概論 Introduction to Embedded System	3	3		高等通訊系統模擬與實驗 Advanced Communication System Simulation and Experiment	3	3					
		機率與應用 Probability theory and applications			3	3	資料結構 Data Structure	3	3	機器人程式設計 Robot Programming	3	3		高等電力系統 Advanced Power System	3	3					
							計算機結構 Computer Structure			3	3	人工智慧與機器學習 Artificial Intelligence and Machine Learning	3	3	深度學習概論 Introduction to Deep Learning	3	3				
							機器人控制入門 Introduction to Robot Control			3	3	雲端通信整合實務 Integration to Cyber Cloud and Heterogeneous Networks of Practices	3	3	模糊系統 Fuzzy System	3	3				
							自動控制 Automatic Control			3	3	電機機械(一) Electric Machinery I	3	3	自旋電子材料學 Spintronics materials and devices	3	3				
											3	3	5G應用服務與電信新技術趨勢 The Application and Service of 5G and new technology tendency of telecommunication	3	3	鎖相迴路設計與應用 Design and Application for Phase Locked Loop	3	3			
												3	3	數位信號處理概論 Introduction to Digital Signal Processing	3	3	電力電子學 Power Electronics	3	3		
													3	3	數位通訊導論 Introduction to Digital Communications	3	3	科學計算 Scientific computing	3	3	
													3	4	通訊實驗 Communication Laboratory	3	3	智慧淨零碳排與AI應用 Smart net-zero carbon emissions and AI applications	3	3	
													3	3	傳輸系統電路設計與模擬 Circuit Design and Simulation for Transmission System			編碼理論 Coding Theorem		3	3
													3	3	物聯網應用系統 System and application of internet of things			電力電子實務 Practice of Power Electronic		3	3
													3	3	行動通信概論 Introduction to cellular telecommunication			智慧型計算 Intelligent Computation		3	3
													3	3	電機機械(二) Electric Machinery II			深度學習 Deep Learning		3	3
													3	3	電力系統 power system			太陽能電力系統 Solar Power System		3	3
													3	3	磁性科技與應用 Magnetic technology and applications			數位信號處理 Digital Signal Processing		3	3
															行動通訊系統 Mobile Communication Systems				3	3	
															工業配電 Industrial Power Distribution					3	3
															大型語言模型與智慧應用實務 Large Language Models and Practical Intelligent Applications				3	3	
		材料科學與工程導論(二) Introduction to Materials Science and Engineering II			3	3	微處理器系統與實驗 Microprocessor Systems and Experiments	3	3		FPGA系統設計實務 FPGA System Design and Practice	3	3		薄膜工程 Thin Film Engineering	3	3				

固態與積體電路領域 Solid state and integrated circuit					單晶片原理應用 Principles and applications of single chip microcomputer lab	3	3		超大型積體電路設計導論 Introduction to VLSI Design	3	3		射頻積體電路與模擬 Simulation and Design of Radio Frequency Integrated Circuits	3	3				
					固態分析技術 Solid-State Analysis Techniques		3	3	微波系統導論 RF Microwave Wireless Systems	3	3		模式化通訊IC設計 Model-based Communication IC	3	3				
					硬體描述語言程式設計與模擬 System Design Using Hardware Description Language		3	3	積體電路模擬實務 Integrated Circuits Design Practice	3	3		半導體製程技術 Semiconductor Technology	3	3				
					電腦輔助電路設計 Computer-Aided Design		3	3	高速電路板設計 High-Speed PCB Design		3	3	射頻無線系統與應用 Rf Wireless Systems and	3	3				
									前瞻性類比積體電路佈局設計 Advanced Analog IC Layout Design and Laboratory		3	3	能量轉換原理 Energy Conversion Principle	3	3				
									感測器實務 Practice and Applications of Sensor		3	3	新能源技術 New Energy Technologies			3	3		
													超大型積體電路設計 VLSI Design			3	3		
													表面工程 Surface Engineering			3	3		
													太陽能技術 Technology of solar energy			3	3		
													高頻電路佈局與模擬 Layout and Simulation of High Frequency Circuits			3	3		
													類比積體電路設計與模擬 Analog Integrated Circuits: Design and Simulation			3	3		
													半導體元件及物理 Semiconductor Components and Physical			3	3		
													半導體量測技術 Semiconductor Measurement Technology			3	3		
													通訊網路積體電路設計 Communications Network Integrated Circuit Design			3	3		
專業選修總計				2	14			15	18			38	41			57	63		248
學期總計				18	24			25	31			46	43			59	63		

備註/Notes:
一、畢業總學分132學分，共同必修 24學分[含通識課程16學分（由通識中心規劃）]，專業必修（含院必修及系必修）61學分，專業選修47學分(包含12學分可選修非本系所開設之課程)，且須通過「本校學生英文及資訊能力畢業門檻及輔導辦法」相關規定始可畢
The total number of credits for graduation is 132 credits, General Required Courses: 24 credits [including General Education: 16 credits(planned by general education)], Professional Required: 54 credits (including College Required and Department Required Courses),Professional
二、已修習通訊原理方可選修數位通訊導論、數位通訊系統、通訊實驗。已修習信號與系統方可選修數位信號處理概論。已修習微積分(一)方可修習微積分(二)。
Completion of the course on Principles of Communications is a prerequisite for taking Introduction to Digital Communications, Digital Communication Systems, and Communication Laboratory.
三、專題研究（一）得抵修「專題製作(三)」。
"Directed Research I" can be offset by "Senior Project II"
四、學士班四年級課程與碩士班課程名稱相同時，課程同時適用碩士班。
When the course names in the fourth-year undergraduate curriculum match those in the master's program, the course is applicable to the master's program at the same time.
五、表列選修科目為預定科目，將視實際需要而調整。
Elective courses listed are tentative and may be adjusted according to actual circumstances.