國立金門大學　電機工程學系學士班　課程規劃表

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

113 學年度入學新生適用

Applicable for students Admitted in Academic Year 2024

本學系學生畢業時至少應修滿 132學分，包括
Graduation Requirement: A minimum of 132 credits, including:

共同必修 8 學分 General Core Curriculum: 8 credits	通識課程 16 學分 General Education Courses: 16 credits
院 必 修 6 學分 College Required Courses: 6 credits	系 必 修 58 學分 Department Required Courses: 58 credits
專業選修 44 學分(包括 12 學分可選修非本學系所開設之課程) Professional Electives: 44 credits (including up to 12 credits from other departments)	

修訂歷程
Revision History

113年3月07日112學年度第二學期第一次系課程規劃委員會訂定通過
Approved on March 7, 2024, during the 1st Departmental-level Curriculum Planning Committee Meeting of the 2nd Semester, Academic Year 2023
113年4月10日112學年度第二學期第一次院課程規劃委員會訂定通過
Approved on April 10, 2024, during the 1st college-level Curriculum Planning Committee Meeting of the 2nd Semester, Academic Year 2023
113年06月05日112學年學期第二學期第一次校級課程規劃委員會通過
Approved on June 5, 2024, during the 1st school-level Curriculum Planning Committee Meeting of the 2nd Semester, Academic Year 2023
113年10月16日113學年度第一學期第一次系課程規劃委員會修定通過
Approved on October 16, 2024, during the 1st Departmental-level Curriculum Planning Committee Meeting of the 1nd Semester, Academic Year 2024
113年10月23日113學年度第一學期第一次院課程規劃委員會修定通過
Approved on October 23, 2024, during the 1st college-level Curriculum Planning Committee Meeting of the 1nd

		一年級 First Year	上學期 Semester 學分 Cr	上學期 Semester 時數 Hr	下學期 Semester 學分 Cr	下學期 Semester 時數 Hr	二年級 Second Year	上學期 Semester 學分 Cr	上學期 Semester 時數 Hr	下學期 Semester 學分 Cr	下學期 Semester 時數 Hr	三年級 Third Year	上學期 Semester 學分 Cr	上學期 Semester 時數 Hr	下學期 Semester 學分 Cr	下學期 Semester 時數 Hr	四年級 Fourth Year	上學期 Semester 學分 Cr	上學期 Semester 時數 Hr	下學期 Semester 學分 Cr	下學期 Semester 時數 Hr	四年合計 Total
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 Subtotal																						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		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 I	1	3			電子學(三) Microelectronic Circuits III	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			通訊原理 Principles of	3	3								
		數位邏輯 Digital logic	3	3			電路學(一) Electronic circuits I	3	3			信號與系統 Signals and Systems	3	3								
		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(一) Senior Project I	2	2								
		微積分(二) Calculus II			3	3	電子電路實習(二) Microelectronic Circuits Experiments II			1	3	專題製作(二) Senior Project II			2	2						
		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			11		2			2		0		58
專業必修總計 Subtotal			16		10			10		13			11		2			2		0		64
專業選修 Professional Electives	共同選修 General Professional Electives	資訊科技認證(一) Information Technology Certification I	2	2								科技新聞導讀 Science news reading	2	2			專題研究（一） Directed Research I	2	2			
		資訊科技認證(二) Information Technology Certification II			2	2						科技新聞翻譯 Science news translation			2	2	工程倫理 Engineering Ethics	3	3			
												線性代數 Linear Algebra			3	3	校外專業實習（一） Extramural Practicum I	4	4			
																	專題研究（二） Directed Research II			2	2	
																	企業實務培訓 Enterprises Practical			3	3	
																	校外專業實習（二） Extramural Practicum II			4	4	
	通訊與系統應用領域 Communication and System Application	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 Embeded 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			
												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			電力電子學 Power Electronics	3	3			
												數位信號處理概論 Introduction to Digital Signal Processing			3	3	智慧淨零碳排與AI應用 Smart net-zero carbon emissions and AI	3	3			
												數位通訊導論 Introduction to Digital Communications			3	3	編碼理論 Coding Theorem			3	3	
												通訊實驗 Communication Laboratory			3	4	鎖相迴路設計與應用 Design and Application for Phase Locked Loop			3	3	
												傳輸系統電路設計與模擬 Circuit Design and Simulation for Transmission			3	3	通訊網路積體電路設計 Communications Network Integrated Circuit Design			3	3	
												物聯網應用系統 System and application of internet of things			3	3	電力電子實務 Practice of Power Electronic			3	3	
												行動通信概論 Introduction to cellular telecommunication			3	3	智慧型計算 Intelligent Computation			3	3	
												電機機械(二) Electric Machinery II			3	3	深度學習 Deep Learning			3	3	
												電力系統 power system			3	3	工業配電 Industrial Power Distribution			3	3	
												磁性科技與應用 Magnetic technology and applications			3	3						
	固態與積體電路領域 Solid state and integrated circuit	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			
							單晶片原理應用 Pinciples 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 Design	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	2	2			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			2	2	射頻無線系統與應用 Rf Wireless Systems and Applications	3	3			
												前瞻性類比積體電路佈局設計 Advanced Analog IC Layout Design and Laboratory			3	3	超大型積體電路設計 VLSI Design			3	3	
												感測器實務 Practice and Applications of Sensor			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	
專業選修總計 Subtotal			2		14			15		18			34		40			48		48		219
學期總計 Subtotal			18		24			25		31			45		42			50		48		

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）64學分，專業選修44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
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: 64 credits (including College Required and Department Required Courses),Professional Electives: at least 44 credits (including up to 12 credits from outside the department),Students graduation requirements follow the university's "Graduation Threshold and Counseling Guidelines for English and Information Competency" .

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.
Completion of the Signals and Systems is a prerequisite for taking Introduction to Digital Signal Processing. Calculus I is a prerequisite for Calculus II.

三、「專題製作（一）、(二)、(三）」得抵修「專業實習（一）、(二)、(三)」；專題研究（一）得抵修「專題製作(三）」。
"Senior Project I, II and III" can be offset by "Project Production I, II and III "；"Directed Research I can be offset by " Senior Project III ".

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.