逢甲大學 電子工程學系 必選修科目表(114學年度入學學生適用)

Required/Elective Courses for Department of Electronic Engineering, Feng Chia University (Applicable to Students Admitted in the Academic Year 2025)

科目名稱 Course	一 1st. 1	2	科目名稱 Course	二 2nd. 1	2	科目名稱 Course	三 3rd. 1	2	科目名稱 Course	四 4th. 1	2	科目名稱 Course	五 5th. 1	2
必 修 科 目 Required														
GEK2000 科學與人文的對話 THE DIALOGUE BETWEEN SCIENCE AND HUMANITIES	2		ELEN2000 工程數學(一) ENGINEERING MATHEMATICS(1)	3		ELEN3012 半導體物理 SEMICONDUCTOR PHYSICS	3		ELEN4927 專題研究(二) SPECIAL TOPICS STUDY (2)	1				
ATHL1003 體育(一) PHYSICAL EDUCATION(1)	1		ENGL1046 大學精進英文(一) Advanced English(1)	2		ELEN3000 電子學(三) ELECTRONICS (3)	3							
CHIN1065 中文思辨與表達(一) CRITICAL THINKING AND EXPRESSION IN CHINESE(1)	2		ELEN2017 固態電子導論 INTRODUCTION TO SOLID STATE ELECTRONICS	3		ELEN3001 電子學實驗(三) ELECTRONICS LAB.(3)	1							
ENGL1006 大學基礎英文(一) GENERAL ENGLISH (1)	2		ELEN2002 電子學(一) ELECTRONICS (1)	3		ELEN4926 專題研究(一) SPECIAL TOPICS STUDY (1)		1						
IEE1000 計算機概論(一) INTRODUCTION TO COMPUTER(1)	3		ELEN2005 電子學實驗(一) ELECTRONICS LAB.(1)	1		ELEN3014 超大型積體電路設計導論 INTRODUCTION TO VLSI CIRCUIT DESIGN		3						
IEE1002 計算機概論實習(一) THE PROGRAMMING LABORATORY(1)	1		ELEN2008 電路學(一) CIRCUIT THEORY(1)	3										

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IEE1008 資電概論與倫理 INTRODUCTION AND ETHICS TO INFORMATION AND ELECTRICAL ENGINEERING	2		ELEN2007 數位系統設計 DIGITAL SYSTEM DESIGN	3										
MATH1005P 微積分(一)實習 RECITATION OF CALCULUS (1)	0		ELEN2001 工程數學(二) ENGINEERING MATHEMATICS(2)		3									
MATH1005 微積分(一) CALCULUS (1)	3		ENGL1054 大學精進英文(二) Advanced English(2)		2									
IEE1005 線性代數 LINEAR ALGEBRA	3		ELEN2004 信號與系統 SIGNALS AND SYSTEMS		3									
ATHL1004 體育(二) PHYSICAL EDUCATION(2)		1	ELEN2003 電子學(二) ELECTRONICS(2)		3									
CHIN1066 中文思辨與表達(二) CRITICAL THINKING AND EXPRESSION IN CHINESE(2)		2	ELEN2006 電子學實驗(二) ELECTRONICS LAB.(2)		1									
GEG2000 現代公民與社會實踐 MODERN CITIZENSHIP AND SOCIAL PRACTICE		2	ELEN2009 電路學(二) CIRCUIT THEORY(2)		3									

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ENGL1025 大學基礎英文(二) GENERAL ENGLISH (2)		2	ELEN2010 電磁學(一) ELECTROMAGNETICS(1)		3									
IEE1001 計算機概論(二) INTRODUCTION TO COMPUTER(2)		3	ELEN2012 微處理機系統 MICROPROCESSOR SYSTEMS		3									
IEE1003 計算機概論實習(二) THE PROGRAMMING LABORATORY(2)		1	ELEN2013 微處理機系統實習 THE EXPERIMENT OF MICRO-PROCESSOR SYSTEM		1									
MILT1035 國防科技 NATIONAL DEFENSE SCIENCE AND TECHNOLOGY	1													
IEE1010 普通物理-電、磁、光 GENERAL PHYSICS - ELECTRIC, MAGNETIC, OPTICS	3													
IEE1011 普通物理-電、磁、光實驗 GENERAL PHYSICS - ELECTRIC, MAGNETIC, OPTICS LAB.	1													
MATH1006P 微積分(二)實習 RECITATION OF CALCULUS (2)	0													

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MATH1006 微積分(二) CALCULUS(2)		3												
IEE1006 邏輯設計 LOGIC DESIGN		3												
IEE1007 邏輯設計實習 LOGIC DESIGN LAB.		1												
選 修 科 目 Elective														
IEE3017 Python程式設計 PROGRAMMING WITH PYTHON		2	ELEN2020 IOT智慧電子系統 INTRODUCTION TO IOT ELECTRONIC SYSTEM	3		ELEN3031 EDA電子設計自動化導論 NTRODUCTION TO ELECTRONIC DESIGN AUTOMATION	3		ELEN4016 化合物半導體元件 COMPOUND SEMICONDUCTOR DEVICES	3				
			ELEN2018 向量分析 VECTOR ANALYSIS	3		ELEN2023 三維微電子元件與技術導論 3D MICROELECTRONIC DEVICES AND TECHNOLOGIES INTRODUCTION	3		ELEN4003 功率元件 POWER DEVICES	3				

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			ELEN2021 自主式無人載具系統概論 INTRODUCTION TO AUTONOMOUS VEHILES	3		ELEN3015 可規劃邏輯設計實務 PROGRAMMABLE LOGIC DESIGN AND REALIZATION	3		ELEN4015 半導體元件模型 SEMICONDUCTOR DEVICES MODELING	3				
			ELEN2022 自動化光學檢測實務 AUTOMATED OPTICAL INSPECTION PRACTICE	3		ELEN3021 兆赫波光學及元件應用 TERAHERTZ QUASI-OPTICS AND DEVICES	3		ELEN4025 半導體設備與工程應用 SEMICONDUCTOR EQUIPMENT AND APPLICATIONS	3				
			ELEN2024 穿戴式腦波儀控制與應用 WEARABLE ELECTROENCEPHALOGRAF DEVICE: CONTROL AND APPLICATIONS	3		ELEN2015 近代物理 MODERN PHYSICS	3		IEE3016 系統思維與統計應用 SYSTEM THINKING AND APPLIED STATISTICS	3				
			IEE3011 智慧機器人概論與實作 INTRODUCTION AND IMPLEMENTATION OF INTELLIGENT ROBOTS	3		ELEN3020 計算機結構學 COMPUTER ARCHITECTURE	3		ELEN4018 系統晶片設計導論 SYSTEM-ON-CHIP SYSTEM DESIGN OVERVIEW	3				
			IEE3012 智慧辨識檢測與應用 APPLICATIONS OF INTELLIGENT RECOGNITION AND OBJECTS DETECTION	3		ELEN3025 記憶體元件導論 INTRODUCTION TO MEMORY DEVICES	3		ELEN4005 固態物理(二) SOLID STATE PHYSICS(II)	3				
			ELEN3017 超大型積體電路設計工具應用 APPLICATION OF VLSI DESIGN TOOLS		3	ELEN4957 專題產業實習(暑一) PROJECT-COOPERATIVE INDUSTRIAL INTERNSHIP(SUMMER1)	1		ELEN4006 真空技術概論 INTRODUCTION TO VACUUM TECHNOLOGY	3				
			ELEN2025 進階 C#程式設計 ADVANCED C# PROGRAMMING		3	ELEN4958 專題產業實習(暑二) PROJECT-COOPERATIVE INDUSTRIAL INTERNSHIP(SUMMER2)	1		ELEN4022 高頻積體電路導論 INTRODUCTION TO HIGH FREQUENCY INTEGRATED CIRCUITS	3				

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			ELEN3006 電子材料 ELECTRONIC MATERIALS		3	ELEN4959 專題產業實習(暑三) PROJECT-COOPERATIVE INDUSTRIAL INTERNSHIP(SUMMER3)	1		ELEN4953 專題產業實習 PROJECT-COOPERATIVE INDUSTRY INTERNSHIP	9				
			ELEN2019 影像辨識感測應用 IMAGE RECOGNITION AND SENSING APPLICATIONS		3	ELEN4960 專題產業實習(暑四) PROJECT-COOPERATIVE INDUSTRIAL INTERNSHIP(SUMMER4)	1		ELEN4009 超大型積體電路設計實務 DESIGN AND IMPLEMENTATION OF VLSI CIRCUITS	3				
			ELEN2014 機率論 PROBABILITY		3	ELEN3023 嵌入式系統 EMBEDDED SYSTEMS	3		ELEN4019 超大型積體電路設計製作 LAB. OF VLSI IMPLEMENTATION	3				
			ELEN2016 積體電路導論 INTRODUCTION TO INTEGRATED CIRCUIT		3	ELEN3022 量子電腦概論 INTRODUCTION TO QUANTUM COMPUTER	3		ELEN4021 超大型積體電路測試技術 VLSI TEST TECHNOLOGY	3				
						ELEN2011 電磁學(二) ELECTROMAGNETICS(2)	3		ELEN4010 超大型積體電路製程(一) VLSI TECHNOLOGY(1)	3				
						ELEN3018 數位積體電路 DIGITAL INTEGRATED CIRCUITS	3		ELEN4048 微創手術科技實務 ADVANCED TECHNOLOGY AND PRACTICE OF MINIMALLY INVASIVE SURGERY	3				
						ELEN3011 數值方法與分析 NUMERICAL METHOD AND ANALYSIS	3		ELEN4004 電子元件實務應用 ELECTRONIC DEVICES LABORATORY	3				

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						ELEN3002 複變函數 COMPLEX VARIABLES AND FUNCTIONS	3		ELEN3019 類比積體電路 ANALOG INTEGRATED CIRCUIT	3				
						ELEN3009 積體電路製程模擬 INTEGRATED CIRCUITS PROCESS SIMULATION	3		ELEN4020 元件可靠度概論 INTRODUCTION TO DEVICE RELIABILITY		3			
						ELEN4024 人工智慧視覺加速器設計 AI VISUAL ACCELERATOR DESIGN		3	ELEN4007 半導體光學 OPTICS IN SEMICONDUCTORS		3			
						ELEN3030 三維微電子系統封裝導論 INTRODUCTION TO 3D MICROELECTRONIC SYSTEM PACKAGE		3	ELEN4002 半導體實驗與量測 SEMICONDUCTOR CHARACTERIZATION		3			
						ELEN3024 介面設計 INTERFACE DESIGN		3	ELEN3004 光學薄膜材料及應用 MATERIALS AND APPLICATIONS OF OPTICAL THIN FILMS.		3			
						ELEN3008 半導體元件 SEMICONDUCTOR DEVICES		3	ELEN4001 軟性電子元件 FLEXIBLE ELECTRONIC DEVICES		3			
						ELEN3028 先進半導體設備技術概論 INTRODUCTION OF ADVANCED SEMICONDUCTOR EQUIPMENT		3	ELEN4011 超大型積體電路製程(二) VLSI TECHNOLOGY(2)		3			

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	1	2		1	2		1	2		1	2		1	2
						IEE3015 系統思維與機率應用 SYSTEM THINKING AND APPLIED PROBABILITY		3	ELEN4000 微波元件 MICROWAVE DEVICES		3			
						ELEN3029 車用電子與感測系統概論 INTRODUCTION OF AUTOMOTIVE ELECTRONICS AND SENSING SYSTEMS		3	ELEN4012 感測元件 SENSOR DEVICES		3			
						ELEN3005 固態物理(一) SOLID STATE PHYSICS(I)		3	ELEN4023 電子電路設計實務 LABORATORY OF ELECTRONIC CIRCUIT DESIGN		3			
						ELEN3007 奈米應用概論 INTRODUCTION TO NANO APPLICATION		3	ELEN4013 積體電路元件模擬 INTEGRATED CIRCUIT DEVICE SIMULATION		3			
						ELEN3026 奈米薄膜元件與技術導論 INTRODUCTION TO NANOMETER THIN-FILM DEVICES AND TECHNOGY		3	ELEN4027 積體電路設計暨佈局實務 DESIGN AND LAYOUT IMPLEMENTATION OF INTEGRATED CIRCUIT		3			
						ELEN3010 金氧半元件 MOS DEVICES		3	ELEN4008 薄膜技術導論 INTRODUCTION TO THIN FILM TECHNOLOGY		3			
						ELEN3027 射頻積體電路設計導論與實務 INTRODUCTION AND DESIGN OF RADIO FREQUENCY INTEGRATED	3							

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						ELEN3003 量子物理 QUANTUM PHYSICS		3						
						IEE3013 感測與定位整合平台 SENSING AND POSITIONING INTEGRATION PLATFORM		3						
						ELEN3013 電子電路學 ELECTRONIC CIRCUITS		3						
						ELEN4017 數位信號處理晶片應用 APPLICATIONS ON DSP CHIPS		3						
						ELEN3032 鰭式電晶體原理與模擬 FinFET PRINCIPLE AND SIMULATION		3						

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(1)畢業學分：【130】學分
(2)本系必修：【75】學分
(3)本系選修：至少【27】學分
(4)外系選修：至少【0】學分
(5)通識基礎課程：【16】學分
(6)通識選修課程：【12】學分

(1)Graduation credits ：【130】credits

(2)Required credits in this department ：【75】credits

(3)Elective credits in this department ：At least 【27】credits

(4)Elective credits from other departments ：At least【0】credits

(5)General education foundation course credits ：【16】credits

(6)General education elective course credits ： 【12】credits

說明：
一、通識課程修課規定：
(一)通識基礎必修課程16學分：
1.中文思辨與表達4學分。
2.英文8學分：大學基礎英文4學分、大學精進英文4學分。(外文系、國科管院除外)
3.核心必修4學分：【現代公民與社會實踐】及【科學與人文的對話】均為單學期2學分之課程。
(二)通識選修課程12學分：
分為【全球氣候變遷與永續發展】、【人文藝術與社會經典教育】、【世界格局與歷史地理視野】及【科技知識原理與趨勢浪潮】等四大領域課程，合計修畢12學分始符合規定。 跨領域設計學院、社會創新學院、創能學院、圖書館 MOOCs、各學院之跨域專題課程得申請認列上述四大領域課程，並以6學分為上限，但同一課程不得重複認列（相關認列課程以網路公告為主）。
(三)通識共同必修課程3學分：（不計入畢業學分）
1.全民國防教育軍事訓練。一年級必修課程(國防科技)1學分，以學院別劃分為原則，第一學期或第二學期均開設課程。
2.體育。一年級必修2學分。
3.班級活動。
二、軍訓、體育選修科目畢業學分採計規定：
(一)軍訓：全民國防教育選修課程為2學分，學生至多修習四門(國際情勢、全民國防、防衛動員、國防政策)，列入畢業之學分數請參考本系修業須知。
(二)體育：選修課程是否計分及其他修課規定，請參考本系修業須知。
三、有關修習非本系至少9學分及其他修課規定，請參考本系修業須知。
四、外籍生經國際處審核後，送相關單位辦理免修全部軍訓課程。

◆Regulations for General Education Course Selection
(1) Foundation Required Courses 16 Credits:
■ Critical Thinking and Expression In Chinese 4 Credits.
■ English 8 Credits: General English 4 Credits, Advanced English 4 Credits. (Excluding Department of Foreign Languages and Literature, DFLL and International School of Technology and Management, ISTM)
■ Required Core Course 4 Credits: "Modern Citizenship and Social Practice" and "The Dialogue between Science and Humanities" are both one-semester, 2-credit courses.
(2) Elective Courses 12 Credits:
These courses are divided into four major domains: "Global climate change and sustainable development. GEG," "Humanities & arts and classical education of social science. GEH," "World patterns and perspectives of history & geography. GEW," and "Knowledge, principles and trends of science and technology. GEK." Completion of 12 credits in total is required to meet the regulations. Interdisciplinary thematic courses of D.School, S.School, i.School, Library MOOCs, and each college can be recognized as the above four major domains with a limit of 6 credits, but the same course cannot be recognized repeatedly. Please refer to the online announcement for further details.

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		(3) Common Required Courses 3 Credits: (Not counted in graduation credits) ■ National Defense Education and Military Training (National Defense Science And Technology): This is a one-credit, mandatory course for freshmen offered in both the first semester and the second semester based on college divisions. ■ Physical Education: This is a 2-credit, mandatory for freshmen. ■ Class Activities. ◆Military Training and Physical Education Elective Course Graduation Credit Calculation Regulations: (1) Military Training: "Civil Defense Education" is a two-credit elective course. Students may take up to four courses, including International Situation, Civil Defense, Defense Mobilization, National Defense Politics. Please refer to the department's academic regulations for the inclusion of credits towards graduation. (2) Physical Education: Please refer to the department's academic regulations and other enrollment requirements for whether physical education elective courses are counted as credits. ◆Foreign students, after reviewed by the Office of International Affairs, are exempted from taking all military training courses after being sent to relevant units for processing. ◆Regarding the completion of at least 9 credits from courses outside the department and other degree programs requirements, please refer to the department's academic regulations. d_s36_wp360390_5_1								