

Course Credit List for Undergraduate Students of the Department of Electronic Engineering, National Ilan University

類別	科目名稱與編號 Course Title and Code	英文課名 English Course Title	選別	學分	演講	實習	第一學年		第二學年		第三學年		第四學年		備註 Remarks AY 2019 means academic year 2019
							上	下	上	下	上	下	上	下	
Mandatory	計算機概論 B4ET000033	Introduction to Computer	必	3	3	0	3								Remark 1 Weekly hours of instruction changed to 3 in academic year 2019.
	普通物理 一 B4ET000060	General Physics I	必	3	3	0	3								
	微積分 一 B4ET000073	Calculus I	必	3	3	0	3								
	邏輯設計 B4ET000123	Logic Design	必	3	3	0	3								
	微積分 二 B4ET000074	Calculus II	必	3	3	0		3							
	邏輯設計實驗 B4ET000125	Logic Design Laboratory	必	1	0	3		1							
	基本電學 B4ET010001	Fundamental Electrical Theory	必	3	3	0		3							AY 2015, New addition / Original General Physics II changed to elective
	程式設計 B4ET000067	Computer Programming	必	3	3			3							AY 2020 changes, Original course name: computer program
	數位系統設計 B4ET010010	Digital System Design	必	3	3	0		3							AY 2017, Changed from major to compulsory major. Changed the teaching semester
	線性代數 B4ET000113	Linear Algebra	必	3	3	0			3						AY 2020, Adjust the teaching semester
	工程數學 一 B4ET000006	Engineering Mathematics I	必	3	3	0			3						
	電子電路實驗 一 B4ET000083	Electronic Circuit Laboratory I	必	1	0	3			1						Remark 5
	電子學 一 B4ET000088	Electronics I	必	3	3	0			3						
	電路學 B4ET000093	Circuit Theory	必	3	3	0			3						
工程數學 二 B4ET000007	Engineering Mathematics II	必	3	3	0				3						

計畫管理與書報研讀 B4ET000028	Project Management and Supervised Study	必	1	0	3				1						
訊號與系統 B4ET000041	Signals and Systems	必	3	3	0				3						AY 2014 , Semester change
電子電路實驗 二 B4ET000084	Electronic Circuit Laboratory II	必	1	0	3				1						Remark 5
電子學 二 B4ET000089	Electronics II	必	3	3	0				3						
機率與統計 B4ET000116	Probability and Statistics	必	3	3	0				3						AY 2017 , Change of teaching semester
專題研究 一 B4ET000044	Research on Special Topics I	必	1	0	3					1					
電磁學 B4ET000098	Electromagnetism	必	3	3	0					3					AY 2016 , Semester change
專題研究 二 B4ET000047	Research on Special Topics II	必	1	0	3						1				

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專題研究 三 B4ET040032	Research on Special Topics III	選	1	0	3							1			
普通物理實驗 一 B4ET010002	General Physics Laboratory I	選	1	0	3	1									
科學計算 B4ET010017	Scientific Computation	選	2	1	2	2									AY 2019, New addition
網路伺服器建置 B4ET020003	Internet Server Constitution	選	2	1	2	2									AY 2019, Start semester and course credit changes
圖控行動裝置程式設計 B4ET010018	Graphical App Programming for Mobile Devices	選	2	2	0	2									AY 2020, New addition
普通物理 二 B4ET000062	General Physics II	選	3	3	0		3								AY 2015 , Change
普通物理實驗 二 B4ET010003	General Physics Laboratory II	選	1	0	3		1								
物件導向程式設計 B4ET000024	Design of Object-Oriented Programs	選	3	3	0			3							
科技英文導讀 B4ET000027	Scientific English	選	2	2	0			2							
組合語言 B4ET000049	Assembly Language	選	3	3	0			3							
電子電路模擬 B4ET000085	Electronic Circuit Simulation	選	2	1	2			2							
Python程式設計	Python Program Design and Practice	選	2	2	2	0			2						AY 2019, Change course name and teaching semester



系統程式 B4ET000022	System Programming	選	3	3	0					3						
計算機組織 B4ET000030	Computer System Organization	選	3	3	0					3						
視窗程式設計 B4ET000068	Design of Window Programming	選	2	2	0					2						
電子儀表 B4ET000087	Electronic Measuring Instrumentations	選	3	3	0					3						
離散數學 B4ET000122	Discrete Mathematics	選	3	3	0					3						
資料結構 B4ET020001	Data Structure	選	3	3	0					3						AY 2017, Change from major to major elective
半導體元件物理 B4ET000010	Introduction to Semiconductor Device Physics	選	3	3	0					3						
作業系統原理 B4ET000020	Principles of Operating Systems	選	3	3	0					3						
近代物理 B4ET000026	Modern Physics	選	3	3	0					3						
通訊系統 B4ET000053	Communication Systems	選	3	3	0					3						AY 2017 renamed, Original course name communication system
智慧型行動裝置軟體設計 B4ET000065	Software Design of Intelligent Mobile Devices	選	3	3	0					3						
硬體描述語言設計實驗 B4ET000066	VHDL Design Laboratory	選	1	0	3					1						
微處理機原理 B4ET000070	Principles of Microprocessor Systems	選	3	3	0					3						
微處理機實驗 B4ET000072	Microprocessor System Laboratory	選	1	0	3					1						
電子學 三 B4ET000091	Electronics III	選	3	3	0					3						
電腦網路 B4ET000092	Computer Networks	選	3	3	0					3						
演算法導論 B4ET000100	Introduction to Algorithms	選	3	3	0					3						
網路工程實驗 B4ET000101	Computer Network Engineering Laboratory	選	1	0	3					1						
數位系統快速雛形設計 B4ET000105	Design of Rapid Prototyping of Digital Circuits	選	3	3	0					3						
複變函數 B4ET000115	Complex Variables and Functions	選	3	3	0					3						

積體電路設計導論 B4ET000119	Introduction to Integrated-Circuit Design	選	3	3	0						3								
通訊系統實驗 B4ET000147	Communication System Laboratory	選	1	0	3						1								AY 2017 renamed, original course name Communication System Experiment
通訊電子學 B4ET030001	Communication Electronics	選	3	3	0						3								
智慧物聯網概論與應用 B4ET030016	Introduction & Applications of Intelligent Internet of Things	選	3	3	0						3								AY 2018 renamed, original course name: Introduction and Application of Internet of Things
校外實習 一 B4ET030023	Off-Campus Internship I	選	1	0	0						1								A total of 80 hours of off-campus internship hours, the original electronic engineering practice course I
校外實習 二 B4ET030024	Off-Campus Internship II	選	1	0	0						1								A total of 80 hours of off-campus internship hours, the original electronic engineering practice course II
校外實習 三 B4ET030025	Off-Campus Internship III	選	1	0	0						1								A total of 80 hours of off-campus internship hours, the original electronic engineering practice course III
校外實習 四 B4ET030026	Off-Campus Internship IV	選	1	0	0						1								A total of 80 hours of off-campus internship hours, the original electronic engineering practice course IV
電腦輔助印刷電路設計與實驗 B4ET030030	Computer Aided PCB Designs and Experiments	選	2	1	2						2								
資料工程與實務 B4ET030032	Data Engineering Practice	選	3	3	0						3								
物聯網實驗 B4ET030033	The Implementation of Internet of Things	選	1	0	3						1								
FPGA設計與實驗 B4ET000003	FPGA Design and Laboratory	選	2	1	2						2								
VLSI元件設計與模型 B4ET000005	VLSI Device Design and Modeling	選	3	3	0						3								
介面原理 B4ET000008	Principles of Microcomputer Interfaces	選	3	3	0						3								
光電工程概論 B4ET000014	Introduction to Optical Engineering	選	3	3	0						3								
計算機結構 B4ET000032	Computer Architecture	選	3	3	0						3								
計算機圖學 B4ET000034	Computer Graphics	選	3	3	0						3								
嵌入式單晶片系統應用 B4ET000058	Applications of Embedded System-on-Chip	選	2	2	0						2								
超大型積體電路設計 B4ET000069	VLSI Circuit Design	選	3	3	0						3								
資料庫系統 B4ET000076	Database Systems	選	3	3	0						3								

## Professional electives

電子商務安全 B4ET000079	E-Commerce Security	選	3	3	0								3		
電磁波 B4ET000096	Electromagnetic Waves	選	3	3	0								3		AY 2016, start semester change
網路規劃與管理 B4ET000103	Network Planning and Management	選	3	3	0								3		
數位通訊原理 B4ET000110	Principle of Digital Communication	選	3	3	0								3		
積體電路設計實驗 B4ET000118	Integrated-Circuit Design Laboratory	選	1	0	3								1		
積體電路佈局設計 B4ET030006	Design of Integrated-Circuit Layout	選	3	3	0								3		
人工智慧導論 B4ET030007	Introduction to Artificial Intelligence	選	3	3	0								3		
工業電子 B4ET030008	Industry Electronics	選	3	3	0								3		
社群網路導論 B4ET030010	Introduction to Social Network	選	3	3	0								3		
處理器設計與實作 B4ET030018	Microprocessor Design and Implementation	選	3	3	0								3		
數位通訊實驗 B4ET030020	Digital Communication Labs	選	1	0	3								1		
數位訊號處理實驗 B4ET030028	Digital Signal Processing Laboratory	選	1	0	3								1		AY 2017 year,renamed, original course name: Digital Signal Processing Experiment
數位訊號導論 B4ET030029	Introduction to Digital Signal Processing	選	3	3	0								3		AY 2017 year,renamed, original course name: Introduction to Digital Signals
半導體工程 B4ET000009	Semiconductor Engineering	選	3	3	0								3		
計算機輔助設計 B4ET000038	Computer Aided Design	選	3	3	0								3		
軟體工程 B4ET000050	Software Engineering	選	3	3	0								3		
通訊量測實務 B4ET000054	Communication Measurement Practice	選	3	3	0								3		
資訊安全導論 B4ET000078	Introduction to Information Security	選	3	3	0								3		
線性積體電路設計 B4ET000114	Linear Integrated Circuit Design	選	3	3	0								3		
積體電路製程模擬實驗 B4ET000120	Simulated Experiments on the IC Fabrication Processes	選	1	0	3								1		

DSP積體電路設計 R4ET000001	DSP Integrated Circuit Design	選	3	3	0									3	U course
RFID天線設計 R4ET000002	RFID Antenna Design	選	3	3	0									3	U course
RFID電路設計 R4ET000003	RFID Circuit Design	選	3	3	0									3	U course
手持裝置天線設計 R4ET000005	Antenna Design for Portable Devices	選	3	3	0									3	U course
平行與分散式處理 R4ET000007	Parallel and Distributed Computing	選	3	3	0									3	U course
行動計算 R4ET000015	Mobile Computing	選	3	3	0									3	U course
無線網路 R4ET000031	Wireless Networks	選	3	3	0									3	U course
微光學元件設計 R4ET000032	Design of Micro-Optic Elements	選	3	3	0									3	U course
微波工程 R4ET000033	Microwave Engineering	選	3	3	0									3	U course
新世代網際網路 (IPv6) 整合 技術 R4ET000035	Next Generation Internet Protocol - IPv6	選	3	3	0									3	U course
演算法分析與設計 R4ET000039	Analysis and Design of Algorithms	選	3	3	0									3	U course
數位影像處理 R4ET000043	Digital Image Processing	選	3	3	0									3	U course
數位積體電路設計 R4ET000044	Digital Integrated Circuit Design	選	3	3	0									3	U course
積體光學 R4ET000046	Integrated Optics	選	3	3	0									3	U course
類比積體電路設計 R4ET000047	Analog Integrated Circuit Design	選	3	3	0									3	U course
編碼理論 R4ET000051	Coding Theory	選	3	3	0									3	U course

嵌入式系統設計與應用 R4ET010001	Design and Application of Embedded Systems	選	3	3	0											3	U course	
雲端技術 R4ET010016	Cloud Computing Techniques	選	3	3	0											3	U course	
微感測器及感測電路設計 R4ET010018	Design of Microsensors and Sensing Circuits	選	3	3	0											3	U course AY 2015, New addition	
無線射頻識別與近場通訊 R4ET010020	Radio Frequency Identification and Near Field Communication	選	3	3	0											3	U course AY 2016, New addition	
模糊理論與應用 R4ET010023	Fuzzy Theory and Applications	選	3	3	0											3	U course.AY 2017, New addition	
物聯網核心技術與應用 R4ET010024	IoT Core Technology and Applications	選	3	3	0											3	U course.AY 2017, New addition	
數位訊號處理 R4ET010028	Digital Signal Processing	選	3	3	0											3	U course.AY 2017 renamed, original course name: Digital Signal Processing	
電腦網路工程 R4ET010036	Computer Network Engineering	選	3	3	0											3		
半導體元件模擬實驗 B4ET000011	Simulated Experiments on Semiconductor Devices	選	1	0	3												1	
嵌入式系統實驗 B4ET000057	Embedded System Laboratory	選	1	0	3												1	
寬頻整合服務數位網路 B4ET000104	Broadband Integrated Service Digital Networks	選	3	3	0												3	
積體電路製程整合 B4ET000121	Process Integration of IC	選	3	3	0												3	
資料壓縮 B4ET040010	Data Compression	選	3	3	0												3	
編譯器設計 B4ET040016	Compiler Design	選	3	3	0												3	
VLSI數位訊號處理 B4ET040031	VLSI Digital Signal Processing	選	3	3	0												3	AY 2017 renamed, original course name: VLSI digital signal processing
光纖通訊原理與應用 R4ET000011	Fiber Optics Communication Theory and Applications	選	3	3	0												3	U course
行動通訊 R4ET000016	Mobile and Wireless Communicatons	選	3	3	0												3	U course
型態辨識 R4ET000018	Pattern Recognition	選	3	3	0												3	U course
射頻積體電路設計 R4ET000021	RF Integrated Circuit Design	選	3	3	0												3	U course
密碼學 R4ET000024	Cryptography	選	3	3	0												3	U course



演化式計算 R4ET000038	Evolutionary Computation	選	3	3	0													3	U course
類神經網路 R4ET000048	Neural Networks	選	3	3	0													3	U course
資料探勘 R4ET010013	Data Mining	選	3	3	0													3	U course
語音訊號處理 R4ET010030	Speech Signal Processing	選	3	3	0													3	U course, AY 2017 renamed, original course name: Voice Signal Processing
多媒體訊號處理 R4ET010031	Multimedia Signal Processing	選	3	3	0													3	U course, AY 2017r renamed, original course name: multimedia signal processing
大數據理論與應用 R4ET010032	Theory and Application of Big Data Analytics	選	3	3	0													3	U course
機器學習 R4ET010033	Machine Learning	選	3	3	0													3	
運算模型建構與推論方法 R4ET010034	Computation Modelling and Inference Method	選	3	3	0													3	
電腦視覺 R4ET010035	Computer Vision	選	3	3	0													3	
			303	280	52														
專業必修學分數(Major compulsory credits)			55																
專業選修學分數(Professional elective credits)			38																
畢業通識/共同學分數-必修(General Studies/Common Credits-Compulsory)			22																
畢業通識/共同學分數-選修(General Studies/Common Credit Score-Elective)			8																
通識畢業總學分(General credits)			30																
其他畢業學分數(Other graduation credits)			5																
畢業最低學分數(Minimum credits for graduation)			128																
Remarks	<p>1. The department uses the 3-credit course of "Introduction to Computer" to offset the 2 credits of the mandatory general education course "Information Literacy and Application", and the remaining 1 credit is counted towards the professional mandatory credits of the department.</p> <p>2. Of the elective credits, at least 38 credits must be taken from the professional electives of the department. (Please refer to the list of professional elective courses).</p> <p>3. The professional elective courses listed in the above table are applicable to students admitted to the department in academic year 2020.</p> <p>4. Students must complete at least two course programs before graduation. One of them must be one of the three course programs offered by the department - System Chip Design, Communications, and Intelligent Internet of Things.</p>																		