國立彰化師範大學
電機工程學系學士班畢業條件表暨課程架構表
(114學年度入學學生適用)

National Changhua University of Education

Graduation Requirements and Course Structure for Bachelor's Program of Electrical Engineering

(Applicable for students in 114 academic year)

列印日期(Print Date:2025/08/27)

一.系必修課程

I.Department Required Courses

課程名稱 Course Name	學分/學時 Credit(s) / Hour(s)	年級 Grade	學期 Semester
計算機概論 Introduction to Computer Science	3/3	1	1
普通物理 General Physics	3/3	1	1
程式設計 Program Design	3/3	1	1
微積分(一) Calculus I	3/3	1	1
工程數學(一) Engineering Mathematics I	3/3	1	2
微積分(二) Calculus II	3/3	1	2
電路技術 Circuit Theory Experiments	2/4	1	2
電路學(一) Circuit Theory I	3/3	1	2
線性代數 Linear Algebra	3/3	1	2
工程數學(二) Engineering Mathematics II	3/3	2	1
電子技術(一) Electronic Technology I	2/4	2	1
電子學(一) Electronics I	3/3	2	1
電路學(二) Circuit Theory II	3/3	2	1
邏輯設計與技術 Logic Design and Technology	3/3	2	1
訊號與系統 Signals and Systems	3/3	2	2
電子技術(二) Electronic Technology II	2/4	2	2
電子學(二) Electronics II	3/3	2	2
電磁學(一) Electromagnetics I	3/3	2	2
專題規劃與研究 Planning and Research for Special Topic	1/1	3	1
控制系統 Control System	3/3	3	1

電磁學(二) Electromagnetics II	3/3	3	1
電機機械與技術 Electric Machinery and Technology	3/3	3	1
電資產業概論與工程倫理 Introduction of Electrical Industry and Engineering Ethics	2/2	3	2
專題一(至少2學分) **Special Topic I(2 credits is least required)**			
系統實作專題(一) Special Topic for Systems I	2/4	3	2
研發實作專題(一) Special Topic for Research I	2/4	3	2
產業實作專題(一) Special Topic for Industry I	2/4	3	2
專題二(至少2學分) **Special Topic II(2 credits is least required)**			
系統實作專題(二) Special Topic for Systems II	2/4	4	1
研發實作專題(二) Special Topic for Research II	2/4	4	1
產業實作專題(二) Special Topic for Industry II	2/4	4	1

二.系選修課程

Ⅱ.Department Elective Courses

課程名稱 Course Name	學分/學時 Credit(s)/ Hour(s)
物件導向程式設計與應用 Object-Oriented Programming and Applications	3/3
程式語言 Programming Language	3/3
計算機組織與結構 Computer Architecture	3/3
微控制器基礎與應用 Microcontroller Fundamentals and Applications	3/3
RFID應用 RFID Applications	3/3
介面電路應用與開發 Interface Circuit Applications and Development	3/3
近代物理 Modern Physics	3/3
通訊導論 Introduction to Communication	3/3
智慧感測與資料探勘 Intelligence Sensing and Data Prospecting	3/3
綠色能源科技 Green Energy Technology	3/3
機率與統計 Probability and Statistics	3/3
Python程式語言 Python Programming	3/3
射頻電路設計 RF Circuit Design	3/3

電力系統 Electric Power System	3/3
數位通訊導論 Introduction to Digital Communications	3/3
數值分析 Numerical Analysis	3/3
光電子學 Optoelectronics and Photonics	3/3
神經系統 Nervous System	3/3
軟硬體共同設計 Hardware Software Codesign	3/3
嵌入式作業系統 Embedded Operating Systems	3/3
無線通訊 Wireless Communications	3/3
無線通訊與聯網實務 Wireless Communication and Networking Practices	3/3
微波工程 Microwave Engineering	3/3
電力系統動態分析 Power System Dynamics Analysis	3/3
電力品質 Power Quality	3/3
電力電子學 Power Electronics	3/3
電腦視覺 Computer Vision	3/3
影像處理 Image Processing	3/3
數位電源系統 Digital Power System	3/3
模糊控制 Fuzzy Control	3/3
機器學習 Machine Learning	3/3
積體電路佈局與設計 Integrated Circuit Layout and Design	3/3
類神經網路 Neural Network	3/3
人工智慧 Artificial Intelligence	3/3
天線設計 Antenna Design	3/3
光纖通訊 Optical-Fiber Communication	3/3
肌肉骨骼系統與運動 Musculoskeletal System and Biomechanics	3/3
保護電驛 Protective Relaying	3/3
計算機網路 Computer Network	3/3
動態可重組式晶片系統開發 Dynamically Reconfigurable SoC Development	3/3

深度學習 Deep Learning	3/3
智慧物聯網應用與實務 Applications and Practices of Intelligent Internet of Things	3/3
雷射原理 Principles of Lasers	3/3
電源與電池管理系統 Energy and Battery Management Systems	3/3
電腦視覺專題 Special topics on computer vision	3/3
電腦輔助積體電路設計 Computer-Aided Design of Integrated Circuits	3/3
數位訊號處理 Digital Signal Processing	3/3
數位影像處理 Digital Image Processing	3/3
獨立研究 Independent Studies	2/2

三.先修科目
Ⅲ.Prerequisite Courses

先修課程 Prerequisite Course	後修課程 Subsequent Course

四.畢業條件
Ⅳ.Graduation Requirements

1.最低畢業學分數：128學分（含校必修28學分，系必修67學分，選修33學分），不含軍訓、體育、通識及教育學程學分。
2.修讀本系開設課程，逕予計為畢業學分；修讀非本系開設課程，採計18學分為畢業選修學分，其中9學分需審核；其他畢業學分採計須經本系認定。
3.學生須通過「國立彰化師範大學資訊能力檢定畢業門檻實施辦法」規定，方得畢業。
4.「系統/研發/產業實作專題(一)」課程僅需選擇其中一門修讀，「系統/研發/產業實作專題(二)」課程僅需選擇其中一門修讀。

1.Minimum graduation credits: 128 credits including 28 credits of university-required courses, 67 credits of department-required courses and 33 credits of elective courses; excluding credits related to Military Training, Nursing, Physical Education, General Education and Educational Programs.
2.Any credit offered by our department is qualified and half of 18 credits of elective courses offered by the others need to be approved.
3.The regulations of graduation threshold for information skills test of NCUE is required.
4.One of required courses of "Special topic I" need to be selected and same as "Special topic II".