

中原大學電機工程學系學士班修業辦法
Chung Yuan Christian University Department of Electrical Engineering
Academic Guideline for Bachelor's Program

110 年 7 月 21 日 109 學年度第 2 學期第 3 次教務會議通過
Passed by the 3rd Academic Affairs Meeting of the 109
Academic Year (2nd Semester; July 21, 2021)
112 年 9 月 20 日 112 學年度第 1 學期第 1 次教務會議通過
Passed by the 1st Academic Affairs Meeting of the 112
Academic Year (1st Semester; Sep 20, 2023)

第一條 本學系依據中原大學各類學位名稱訂定程序授予要件及代替碩士博士論文認定辦法、
中原大學研究生學位考試作業規章，訂定本辦法。

Art.1 This guideline is made in accordance with the “Regulations for Master’s and Doctoral Degrees Conferment of Chung Yuan Christian University” and the “Regulations of Graduation Examination for Postgraduates in Chung Yuan Christian University (中原大學研究生學位考試作業規章).

第二條 本學系學士班授予學位之中文、英文名稱如下：

Art. 2 The Chinese and English title of the degrees conferred by the Bachelor’s Program of the Department are as follows:

學系(所、學位學程) 中文、英文全稱 Department (Institution, Degree Programs) Full Title in Chinese and English	授予學位名稱 Awarded Degree Title	
	中文、英文名稱 Chinese / English Title	英文縮寫 English Abbreviation
電機工程學系	工學學士	
Department of Electrical Engineering	Bachelor of Science	B.S.

第三條 本學系學士班應修科目及學分依附表一之規定。

Art. 3 The required subjects and credits for the Bachelor’s Program shall be in accordance with the regulations in Attachment 1.

第四條 學系修業規定如下：

- 一、學系必修科目應以本學系本班修習為原則，依行政程序核准者，不在此限。
- 二、通識延伸選修課程須含院系指定之「工程倫理」。
- 三、本系必修之專題研究(一)或(二)課程得以「業界專題」進行抵認，抵認方式為修滿3學分校外實習及1學分「業界專題」課程及格。但至多僅能抵認一學期專題研究(一)或專題研究(二)。

- 四、雙主修學生應修畢本系專業必修科目，且不得少於 40 學分。原學系必修科目名稱、內容及學分數與本學系科目相同時，得持課程大綱及成績單辦理抵免。抵免後未滿 40 學分之學分數修習本系選修課程補足。
- 五、畢業年級相當於國內高級中等學校二年級之國外或香港澳門地區同級同類學校畢業生，應於規定之修業年限內增加其應修之畢業學分數至少 12 學分，含通識課程 6 學分，以及 6 學分本系選修。

Art. 4 Regulations for the curriculum of the department:

- I. The compulsory courses of the department should be taken by the students of the same class as a principle, and those approved by the administrative procedures are not subject to this requirement.
- II. The extended elective courses of general education should include the "Engineering Ethics (工程倫理)" designated by the college or department.
- III. The department's compulsory courses, "Special Research Topic (I)" or "Special Research Topic (II)", can be credited by the "Industry Projects." The method of credit is to complete 3 credits of off-campus internships and pass 1 credit of "Industry Projects." However, only one semester of Special Research Topic (I) or "Special Research Topic (II) can be credited at most.
- IV. Double-major students should complete the compulsory professional courses of the department, and not less than 40 credits. If the title, content, and credit of the original department's compulsory courses are the same as those of the department, credit exemption can be obtained by submitting the course outlines and transcripts. After the exemption, if the credits obtained are less than 40, students need to take the department's elective courses to complement it.
- V. Students who have graduated from foreign schools at the same level as second-year domestic high school students, or from Hong Kong/Macau schools of the same level, are required to earn at least 12 additional credits during their study period, including 6 credits of general education courses and 6 credits of departmental electives, in order to graduate.

第五條 本辦法未盡事宜悉依本校學則及相關法令規定辦理。

Art. 5 For matters not covered in this academic guideline, follow the related regulations of the Ministry of Education and Chung Yuan Christian University.

第六條 本辦法經教務會議通過後公布施行，修正時亦同。
本辦法適用於自 112 學年度起學士班入學學生。

Art. 6 This academic guideline and any subsequent changes is passed and approved by the Academic Affairs Committee. This guideline is applicable to students enrolled in bachelor's program from the 112 academic year onward.

*Disclaimer: In the event of any difference in interpretation or meaning between the Chinese and English version of this guideline, the Chinese version shall prevail.

中原大學 電機工程學系 應修科目及學分表
List of Required Courses and Credits for Bachelor's Program
in the Department of Electrical Engineering at
Chung Yuan Christian University

(適用 **112** 學年度入學學生)

(Applied to students enrolled in the **112** academic year)

科目名稱 Subject Title	期程 Semester	學分數 Credits	擋修科目及續修條件 Prerequisites & Conditions for continuation	
			科目名稱 Subject Title	限制 Conditions
微積分(上) Calculus (I)	半 Half	3		
微積分(下) Calculus (II)	半 Half	3	微積分(上) Calculus (I)	曾修 Credits Earned
普通物理(一) General Physics (I)	半 Half	3		
普通物理(二) General Physics (II)	半 Half	3		
普通物理實驗(一) General Physics Laboratory (I)	半 Half	1		
普通物理實驗(二) General Physics Laboratory (II)	半 Half	1		
計算機概論(一) Introduction to Computer (I)	半 Half	3		
計算機概論(二) Introduction to Computer (II)	半 Half	3	計算機概論(一) Introduction to Computer (I)	曾修 Credits Earned
線性代數 Linear Algebra	半 Half	3		
邏輯設計與實驗 Logical Design and Experiments	半 Half	3		
工程數學(一) Engineering Mathematics(I)	半 Half	3		
工程數學(二) Engineering Mathematics(II)	半 Half	3		
機率與統計 Probability and Statistics	半 Half	3		
電路學(一) Circuit Theory(I)	半 Half	3		
電路實驗 Circuit Laboratory	半 Half	1		
電路學(二) Circuit Theory(II)	半 Half	3	電路學(一) Circuit Theory(I)	曾修 Credits Earned

學系必修科目
Compulsory
Subjects

	訊號與系統 Signals and Systems	半 Half	3		
	電子學(一) Electronics(I)	半 Half	3		
	電子實驗 Electronics Laboratory	半 Half	1		
	控制工程 Control Engineering	半 Half	3		
	通信原理 The Principles of Communications	半 Half	3		
	電子學(二) Electronics(II)	半 Half	3	電子學(一) Electronics(I)	曾修 Credits Earned
	電磁學 Electromagnetism	半 Half	3		
	專題研究(一) Special Research Topic (I)	半 Half	1		
	專題研究(二) Special Research Topic (II)	半 Half	1		
	類比電路實驗 Analog Circuits Laboratory	半 Half	1		
	微處理機實驗 Mirco-computer Laboratory	半 Half	1		
	電力系統 Electric Power System	半 Half	3		
	電機講座 Lectures on Electrical Eng.	半 Half	0		
合計 Total			68		

畢業學分結構表
Credits for Graduation

畢業應修最低學分數 Minimum Required credits for Graduation	128	基本知能科目 Core Competencies Course		
性質 Types of Courses	學分數 Credit	科目名稱 Subject Name	性質 Semester	學分 Credit
1、基本知能 Core Competencies	6	英文(一)(二) English (I) (II)	半 Half	(1,1)
2、通識基礎必修 Basic Required Courses in General Education	16	實用英文(一)(二) Practical English (I) (II)	半 Half	(1,1)
3、學系必修 Compulsory Courses of the Department	68	英語聽講(一)(二) English Listening and Speaking in Lab (I) (II)	半 Half	(1,1)
4、學系選修 Elective Courses of the Department	12	環境服務學習(二學期) Environment Service-Learning (two semesters)	半 Half	0
5、通識延伸選修 Extensive Elective Courses in General Education	12	大一體育一、大一體育二；大二體育興趣擇二科 Physical Education (I) (II) *Students are required to complete four courses, while the two courses in the second year are selected by the students themselves.	半 Half	0
6、自由選修 Elective Courses	14			
		通識基礎必修科目 Basic Required Courses in General Education		
天 The Creator	宗教哲學 Philosophy of Religion		半 Half	2
	人生哲學 Philosophy of Life		半 Half	2
人 Humanity	台灣政治與民主 Taiwan Politics and Democracy		半(6擇1) 多修無法列入通識學分，亦不得抵認通識延伸課程學分。 Credits obtained from taking extra courses will not be considered towards general education credits and will not be used to fulfill the requirements of Extensive Elective General	2
	法律與現代生活 Law and Modern Life			
	當代人權議題與挑戰 Contemporary Human Rights Issues and Challenges			

		生活社會學 Sociology of Everyday Life	Education Courses	
		全球化大議題 Big Issues of Globalization		
		經濟學的世界 The World of Economics		
		區域文明史 History of Regional Civilizations	半 (2 擇 1) 多修無法列入通識學 分，亦不得抵認通識延 伸課程學分。	2
		文化思想史 History of Cultures and Thoughts	Half (choose 1 from 2) Credits obtained from taking extra courses will not be considered towards general education credits and will not be used to fulfill the requirements of Extensive Elective General Education Courses	
	物 The Entire Creation	運算思維與程式設 計 Computational Thinking and Programming	半 Half	2
		自然科學與人工智 慧導論 Introduction to Natural Science and Artificial Intelligence	半 Half	2
	我 The Individual Self	文學經典閱讀 Chinese Literature Classics	半 Half	2 (2,0)
		語文與修辭 Literacy and Rhetoric	半 Half	2 (0,2)
		合計 Total		16

一、全校性規定：

1. 通識基礎必修課程：「物類」及「我類」基礎課程須於大一完成修習，「我類」基礎課程-文學經典閱讀須於大二上學期修習，語文與修辭須於大二下學期修習。
2. 通識延伸選修課程：分天、人、物、我四大學類，最少各需修滿 2 學分，合計須修滿 12 學分。
3. 電腦資訊相關課程需修滿 2 學分以上，授課內容需包含有程式設計或程式語言運用之教學內涵，且授課時數至少三分之一以上，培養學生邏輯思考、邏輯運算思維與運用科技及創新學習的能力。
4. 自 101 學年度起學士班入學學生，必須通過本校認定之英文能力鑑定考試，始准予畢業。
5. 自 103 學年度起中五生應加修通識課程 6 學分及專業課程 6 學分。
6. 須於畢業前曾修 2 門全英語專業課程。【不含英文(一)、(二)、英語聽講(一)、(二)、

實用英文(一)、(二)、商學院商業英語會話(一)、(二)、英語檢定技巧(應外系學生除外)】。

7. 自由選修學分學習範圍為輔系、雙主修、跨領域學分學程、就業學程、微型學程(他系)、PBL 課程、磨課師(MOOCs)微學分課程(每門課程 1 學分, 至多認列 6 學分)及專業自主學習學分(至多 2 學分)。
8. 有關修課, 成績等相關規定請參考學則。

1. University-wide Regulations:

I. Basic Required Courses in General Education: Foundational courses in "The Entire Creation" and "The Individual Self" must be completed in the first year. The foundational course in "The Individual Self - Chinese Literature Classics" must be taken in the first semester of the second year, while the course in "Literacy and Rhetoric" must be taken in the second semester of the second year.

II. Extensive Elective Courses in General Education: Extensive elective courses are divided into four categories - "the Creator", "Humanity", "The Entire Creation" and "The Individual Self". Students are required to obtain at least 2 credits in each category, 12 credits in total to graduate.

III. Computer and information-related courses must have at least 2 credits, and their teaching content must include programming or the use of programming languages as part of their course content. At least one-third of the course time must be devoted to cultivating students' abilities in logical thinking, logical operation thinking, and the use of technology and innovation in learning.

IV. Starting from the 101 academic year, undergraduate students must pass the English proficiency test recognized by the university in order to graduate.

V. Starting from the 103 academic year, Secondary 5 students are required to take an additional 6 credits of general education courses and 6 credits of professional courses.

VI. Two English-speaking professional courses must be taken before graduation. (Excluding English (I), (II); English Listening and Speaking in Lab (I), (II); Practical English (I), (II), Business English Conversation (I), (II), Skills for English Language Testing (except for students in the Department of Applied Linguistics and Language Studies).

VII. The scope of elective credits includes Minor, Double Majors, Interdisciplinary Credit Programs, career programs, micro-credits (other departments), PBL courses, MOOCs micro-credit courses (each course is 1 credit, and up to 6 credits can be recognized), and professional self learning credits (up to 2 credits).

VIII. Please refer to the Academic Regulations for courses and grades.

二、學系畢業規定：

1. 通識延伸選修須包含院系指定之「工程倫理」。
2. 本系必修之專題研究(一)或(二)課程得以「業界專題」進行抵認，抵認方式為修滿3學分校外實習及1學分「業界專題」課程及格。但至多僅能抵認一學期專題研究(一)或專題研究(二)。
3. 雙主修學生應修畢本系專業必修科目，且不得少於40學分。原學系必修科目名稱、內容及學分數與本學系科目相同時，得持課程大綱及成績單辦理抵免。抵免後未滿40學分之學分數修習本系選修課程補足。
4. 畢業年級相當於國內高級中等學校二年級之國外或香港澳門地區同級同類學校畢業生，應於規定之修業年限內增加其應修之畢業學分數至少12學分，含通識課程6學分，以及6學分本系選修。

2. Regulations for graduation of the department:

I. The extended elective courses of general education should include the "Engineering Ethics (工程倫理)" designated by the college or department.

II. The department's compulsory courses, "Special Research Topic (I)" or "Special Research Topic (II)", can be credited by the "Industry Projects." The method of credit is to complete 3 credits of off-campus internships and pass 1 credit of "Industry Projects." However, only one semester of Special Research Topic (I) or "Special Research Topic (II) can be credited at most.

III. Double-major students should complete the compulsory professional courses of the department, and not less than 40 credits. If the title, content, and credit of the original department's compulsory courses are the same as those of the department, credit exemption can be obtained by submitting the course outlines and transcripts. After the exemption, if the credits obtained are less than 40, students need to take the department's elective courses to complement it.

IV. Students who have graduated from foreign schools at the same level as second-year domestic high school students, or from Hong Kong/Macau schools of the same level, are required to earn at least 12 additional credits during their study period, including 6 credits of general education courses and 6 credits of departmental electives, in order to graduate.

經 112 年 9 月 08 日 112-1-1 校級課程委員會通過。

Passed by the 112-1-1 University Curriculum Committee on Sep 8, 2023

經 112 年 9 月 20 日 112-1-1 教務會議通過。

Passed by the 112-1-1 Academic Affairs Meeting on Sep 20, 2023