國立勤益科技大學日間部四年制 112 學年度 電子工程系(積體電路與系統應用組)學分計畫表 National Chin-Yi University of Technology

Curriculum Planning of 2023 Four-Year Degree in Department of Electronic Engineering: Integrated Circuit and System Application

111.11.23 課程委員會及 111.11.30. 院課程委員會審議通過 111. 12. 13. 枚課程會議及 111. 12. 22. 臨時教務會議審議通過 113. 12. 5. 校課程委員會議及 113. 12. 24. 臨時教務會議審議修訂通過

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	學分 Credits	正課 Lecture	實習 Internship	學分 Credits	正課 Lecture	實習 Internship			
		edits hours)							
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	2	2	0						
Freshman English (I)	2	2	0						
Listening and Speaking (I)	1	1	0						
History and Culture (I)	2	2	0						
Art Appreciation	1	1	0						
Physical Education (I)	0	2	0						
All-Out Defense Education Military Training (I)	0	2	0						
Chinese (II)				2	2	0			
Freshman English (II)				2	2	0			
Listening and Speaking (II)				1	1	0			
History and Culture (Ⅱ)				2	2	0			
Music Appreciation				1	1	0			
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All-Out Defense Education Military Training (II)				0	2	0			
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Physical Education (IV)				0	2	0			
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Liberal Education	2	2	0						
Liberal Education	2	2	0						
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專業必修科目(47 學分) Department Require	d Courses(47	credits hour	rs)						
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Physics (I)	3	3	0						
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Engineering Mathematics (I)	2	2							
Engineering Mathematics (I)	3	3	0						
Electronics (I)	3	3	0						
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		Credits	Lecture	Internship	Credits	Lecture	Internship			
	共同選修科目 General Elective Courses									
第一學年 First Year(無排定共同選修課程 No General Elective Courses)										

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#整理条件 (數位影像處理實作	Digital Image Processing				2	1	3
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	共同專業選修科目 Department General	Elective Co	urses				
	第一學年 First Year						
電子工程概論	Introduction to Electronic Engineering	3	3	0			
產業概論	Introduction to Industrial				3	3	0
	第二學年 Second Year						
校外實習(寒假)一	Internship Program (outside-campus) on Winter Vacation (I)	1	0	1			
校外實習(暑期)一	Internship Program (outside-campus) on Summer Vacation (I)	3	0	3			
監控系統設計及實習	SCADA Design and Practice	3	2	2			
通信電子學	Fundamentals of Electronic Communications				3	3	0
師徒實務專題(一)	Mentor-Apprentice Project study (I)				3	0	3

	第三學年 Third Year				1	1	
產業論壇	Industry Forum	3	3	0			
電磁學	Electromagnetics	3	3	0			
數位通信概論	Introduction to Digital Communication Systems	3	3	0			
校外實習(寒假)二	Internship Program (outside-campus) on Winter Vacation (II)	1	0	1			
校外實習(暑期)二	Internship Program (outside-campus) on Summer Vacation (II)	3	0	3			
智慧電能儲存技術	Smart Technologies for Electrical Energy Storage System	3	3	0			
高頻電路設計	Radio Frequency Circuit Design				3	3	0
電磁波	Electromagnetic Waves				3	3	0
職場倫理論壇	Workplace Ethics Forum				3	3	0
	第四學年 Fourth Year						
通訊儀控程式設計	Communication Instruments Program	3	3	0			
天線設計	Antenna Design	3	3	0			
RFID 技術	RFID Technology	3	3	0			
射頻安全概論	Introduction to RF Security	3	3	0			
專業倫理與社會責任	Professional Ethics and Social Responsibility	3	3	0			
校外實習(寒假)三	Internship Program (outside-campus) on Winter Vacation (III)	1	0	1			
校外實習(暑期)三	Internship Program (outside-campus) on Summer Vacation (III)	3	0	3			
職場倫理實習(一)	Workplace Ethics (I)	3	0	3			
資訊技術實習(一)	Computer Applications Practice (I)	3	0	3			
電子技術實習(一)	Electronic Skill Practice (I)	3	0	3			
產業實務實習(一)	Industrial Skill Practice (I)	3	0	3			
信號完整性	Signal Integrity				3	3	0
通信系統儀測	Communication System Instrumentation				3	3	0
微波工程	Microwave Engineering				3	3	0
RFID 系統	RFID System				3	3	0
射頻收發模組設計	RF Transceiver Module Design				3	3	0
職場倫理實習(二)	Workplace Ethics (II)				3	0	3
資訊技術實習(二)	Computer Applications Practice (II)				3	0	3
電子技術實習(二)	Electronic Skill Practice (II)				3	0	3
產業實務實習(二)	Industrial Skill Practice (II)				3	0	3
師徒實務專題(二)	Mentor-Apprentice Project study (II)	3	0	3			

備註 Note:

、畢業至少應修滿 128 學分【必修 75 學分,選修至少 53 學分(須含本系專業選修至少 36 學分)】

Students should complete at least 128 credits before graduation, includes 75 required credits, 53 elective credits (elective credits should have at least 36 credits from department elective courses).

- 二、本校訂有「國立勤益科技大學學生畢業門檻辦法」,畢業門檻條件:英文能力及自主學習,請依規定辦理。 Our school has established the "National Chin-yi University of Science and Technology Student Graduation Threshold Measures", Graduation threshold: English proficiency and independent study, please follow the regulations.
- 三、博雅通識課程三大領域中,每一領域至少各修習一門課程,學分總計至少 10 學分。每門課程學分數 (時)為 2學分2學時或3學分3學時。

Among the 3 core areas of liberal education curriculum, students should take 10 or more credits in 3 different areas. The credit hours for each course are either 2 hours course with 2 credits or 3 hours course with 3 credits.

- 四、本系畢業門檻一:學生要修讀積體電路與系統應用學程「※必選課程」其中的三門,為其畢業之基本條件。 Three of the required courses(%) offered in the Integrated Circuit and System Application Program must be taken for satisfying the first graduation criteria.
- 五、本系畢業門檻二:學生要取得本系開設之下述「學程」至少一個,為其畢業之基本條件。學生至少要獲得21 學分、或獲得7門課的學分,才能視為取得此學程證明。「※必選課程」,須至少選二門。
 - (一)積體電路與系統應用學程
 - (二)網路多媒體暨遊戲機學程
 - (三)智慧機器人學程

At least one of the following programs must be fulfilled for satisfying the second graduation criteria. Students taking this program are requested to obtain a minimum of 21 credits, including at least 2 required courses to be taken for this program certificate.

- (1) Integrated Circuit and System Application Program
- (2) Network Multimedia and Game Machine Program
- (3) Intelligent Robotics Program
- 六、必選課程為選修,不及格者不必重修、或補修。

Every required course is elective. Failure of these courses is not necessary to re-take for graduation.

七、課程名稱前有標示「●」符號者,為「職能專業課程」。

Courses with a "•" refer to a professional competence course.

八、課程名稱前有標示「AI」符號者,為「人工智慧相關課程」。

Courses with an "AI" refer to an artificial intelligence related course.

九、課程名稱前有標示「 \triangle 」符號者,為程式設計課程。 Courses with a " \triangle " refers to an application design course.

十、學生須選讀本系所訂跨領域學程課程,並有成績登錄。

Students need to register for the course of inter-disciplinary program set by this department and have a record of grades

智慧製造			半導體		
課程選別	學年	課程名稱(學分/學時)	課程選別	學年	課程名稱(學分/學時)
必修	二上	微處理機實習 2/4	必修	二上	電子學(一) 3/3
必修	二下	信號與系統 3/3	必修	二下	電子學(二) 3/3
選修	二下	Python 程式設計 3/3	選修	二上	VLSI 概論 3/3
選修	三上	機器人控制 3/3	選修	二上	半導體物理導論 3/3
外系選修	四上	智慧機電實務 3/3	外系選修	二下	全客户 IC 佈局 3/3
外系選修	四下	物聯網概論 3/3	外系選修	三上	半導體設備概論 3/3

十一、為因應法規變更、評鑑建議或政府計畫規定等外在因素,本系保有調整學分計畫之權利。若有修訂,將於學期開始前公告,並明確說明修訂內容、影響範圍及相關配套措施,以保障學生權益。

The department reserves the right to adjust the curriculum in response to external factors such as changes in regulations, suggestions of evaluation and accreditation, or government program regulations. If there are any revisions, will be announced before the start of the semester, and the revised content, scope of impact, and related supporting measures will be clearly stated to protect the rights and interests of students.