國立交通大學電子工程學系「資訊工程跨域學程」實施要點
"Information Engineering Cross-disciplinary Program" Implementation Key Points from Department of Electronics Engineering, NCTU

105年4月7日系課程會議通過
Approved by Department of Curriculum Meeting on April 7, 2016
105年4月12日院課程會議通過
Approved by School Curriculum Meeting on April 12, 2016

一、 依據國立交通大學跨域學程實施辦法，國立交通大學電子工程學系（以下簡稱本系）為鼓勵學生進行跨領域學習，建立跨域學習深度，協助學生拓展第二專長，提供學生可以在畢業學分不增加（或僅少量增加）情況下，修畢跨域學程，特訂定本要點。

According to cross-disciplinary program implementation measures from National Chiao Tung University, the Department of Electronics Engineering at National Chiao Tung University (hereinafter refer to as Our Department) has set up regulations to provide the opportunity for students to proceed cross-disciplinary learning without increasing graduate credits (or only a few extra credits) in order to encourage students to conduct cross-disciplinary study, build the depth of cross-disciplinary study, and assist students to expand second specialty.

二、 依據國立交通大學跨域學程實施辦法，本系學生修習「資訊工程跨域學程」（以下簡稱本學程），於修畢後可於畢業證書上加註「資訊工程」為跨域專長。

According to cross-disciplinary program implementation measures from National Chiao Tung University, student taking the "information engineering cross-disciplinary program" (hereinafter refer to as Our Program) can remark "information engineering" as cross-disciplinary specialty on the diploma after program is completed.

三、 本要點申請程序及修業規定 Key Points of Implementation

1. 申請程序： Application Procedure:

本系學生欲修習本學程者得於大一下學期或大二下學期向本系提出申請,經本系及資訊工程學系課程委員會審查通過後，並得優先修習本學程課程。

Students in the department can apply for Our Program during the fall semester of freshmen year or fall semester of sophomore year. After review and approval by Our Department and Curriculum Committee of Information Engineering, student can be given priority to attend this program.

2. 本學程的課程列示於『電子工程學系「資訊工程跨域學程」必修科目表』，其課程包含：校必修（含共同必修28學分），本系基礎必修課程（51學分），專業選修領域（至少9學分），以及資訊工程學系的跨域模組課程（31學分），畢業學分至少129學分。

Courses of our program are listed on "compulsory subject list of Department of Electronics Engineering's information engineering cross-disciplinary program", which include: compulsory courses at the university (including 28 credits of common compulsory), core curriculum of our department (51 credits), elective courses of the field (at least 9 credits) and Department of Electronics Engineering's cross-disciplinary module curriculum (31 credits), minimum credit for graduation is 129 credits.

3. 修習本學程之學生，若無法完成2中所規定之課程，可回復修習原電子工程學系的學士學位課程。

If student fails to complete the courses prescribed in item (2), he or she can resume taking the original undergraduate courses of Department of Electronics Engineering.

四、 本系指定一名專任教師擔任跨域學程導師，與資訊工程學系的跨域學程導師組成導師群，專責輔導跨域學程的學生。

Our department must assign one full-time teacher to work as mentor for the cross-disciplinary program who will form a mentor group with Department of Electronics Engineering's cross-disciplinary program mentor to give guidance to the students at cross-disciplinary program.

五、 本要點如遇修訂，須主動知會資訊工程學系。

If key points are revised, take the initiative to inform the Department of Electronics Engineering.

六、 本要點如有未盡事宜，悉依本校學則及其他相關規定辦理。
If there is any unaccomplished matter of the key points, it shall be handled in accordance with the school constitution of our university as well as other relevant regulations.

七、 本要點經校級課程委員會通過並提教務會議核備後實施，修訂時亦同。
The key points are approved by Academic Affairs Meeting before putting it into practice, and shall do the same upon any amendment thereto.

電子工程學系「資訊工程跨域學程」必修科目表
Compulsory subject list of Department of Electronics Engineering's "information engineering cross-disciplinary program"

類別 Category	選別 Type	科目名稱 Course name	學分 Credit 上學期 1st	學分 Credit 下學期 2nd	開課系所 Dept. giving the course	備註 Notes
本系基礎必修（51 學分）Compulsory courses of our department (51 credits)	基礎必修課程（49 學分）Compulsory courses (49 credits)	物理（一）（二）Physics (I) (II)	3	3	電子系 Dept. of Electronics Engineering	
		物理實驗(一)(二) Physics Lab. (I) (II)	1	1	電子系 DEE	
		微積分（一）（二）Calculus (I) (II)	3	3	電子系 DEE	
		計算機概論與程式設計 Int. to Computers & Programming	3		電子系 DEE	
		工程數學 Engineering Mathematics	3/4	3	電子系 DEE	線性代數、微分方程必修，機率與統計、複變函數、離散數學等三科至少選二科，且至少一科及格。Linear Algebra and Differential Equation are required courses. And students are required to take at least two courses among Probability and Statistics, Complex Variable and Discrete Mathematics, and pass at least one course of them.
		電子學（一）(二) Electronics(I)(II)	3	3	電子系 DEE	
		數位實驗 Digital Lab.		2	電子系 DEE	
		電子實驗(一)(二) Electronics Lab.(I)(II)	2	2	電子系 DEE	

		電路學 Introduction to Circuit Theory	3		電子系 DEE	
		電磁學 Electromagnetics		3	電子系 DEE	
		邏輯設計 Logic Design	3		電子系 DEE	
		導師時間暨電子與生活 Electronics & Life	0	0	電子系 DEE	
		電子專題討論 Seminar on Electronics		0	電子系 DEE	
		電子工程專題 Special Project on Electronics Engineering	1		電子系 DEE	
	專業必修實驗課程，任選 1 科（2 學分）Compulsory laboratory courses, choose any 1 course (2 credits)	半導體實驗 Semiconductor Laboratory	2		電子所 Graduate Institute of Electronics Engineering	
		數位訊號處理實驗 Digital Signal Processing Laboratory	2		電子系 DEE	
		微處理機系統與實驗 Microprocessor System and Lab.	2		資工系 Dept. of Computer Science	
		元件電路計測實驗 Device and Circuit Characterization Laboratory	2		電子所 Graduate Institute of Electronics Engineering	
		積體電路設計實驗 Integrated Circuit Design Laboratory	2		電子所 Graduate Institute of Electronics Engineering	
		高頻電路設計與實驗 High-Frequency Circuits & Design Laboratory	2		電子所 Graduate Institute of Electronics Engineering	
		生物晶片實作 Int. and Experimental on Bioelectronics	2		生科系 Dept. of Biological Science and Technology	
		嵌入式系統技術實驗 Embedded System Laboratory	2		電子系 DEE	
		類比積體電路實驗 Analog Integrated Circuits LAB	2		電子系 DEE	
資工系跨域模組（31 學分）	必修 Compulsory courses	數位電路設計 Digital Circuit Design		3	資工系 Dept. of Computer Science	可以抵免之電子系課程「邏輯設計」transferable

修畢於畢業證書加註『跨域專長：資訊工程』 Dept. of Computer Science cross-disciplinary module (31 credits) remark ““information engineering” as cross-disciplinary specialty on the diploma						with “Logic Design” course from Dept. of Electronics Engineering
		作業系統概論 Digital Circuit Design	3		資工系 Dept. of Computer Science	
		跨領域專題 Cross-disciplinary project	2	2	電子系/資工系 Dept. of Electronics Engineering / Dept. of Computer Science	
		計算機組織 Computer Organization		3	資工系 Dept. of Computer Science	可以抵免之電子系課程「計算機組織」 transferable with “Computer Organization” course from Dept. of Electronics Engineering
		演算法概論 Intro. to Algorithms		3	資工系 Dept. of Computer Science	可以抵免之電子系課程「演算法」 transferable with “Algorithms” course from Dept. of Electronics Engineering
		離散數學 Discrete Mathematics		3	資工系 Dept. of Computer Science	可以抵免之電子系課程「離散數學」 transferable with “Discrete Mathematics” course from Dept. of Electronics Engineering
		資料結構與物件導向程式設計 Data Structures and Object- oriented Programming		3	資工系 Dept. of Computer Science	可以抵免之電子系課程「資料結構」及「物件導向程式設計」 transferable with “Data Structures” and “Object-oriented Programming” courses from Dept. of Electronics Engineering
		基礎程式設計 Basic Programming		0	資工系 Dept. of Computer Science	本課程及格條件為通過『程式能力鑑定』 The passing condition for the

						course is based on "Programming Ability Identification"
	選修	軟硬體協同設計概論與實作 Hardware-Software Co-design and Implementation		3	資工系 Dept. of Computer Science	**任選 3 科** Choose any 3 courses
		編譯器設計概論 Intro. to Compiler Design	3		資工系 Dept. of Computer Science	
		嵌入式系統設計概論與實作 Embedded System Design and Implementation		3	資工系 Dept. of Computer Science	
		計算機網路概論 Intro. to Computer Network	3		資工系 Dept. of Computer Science	
		網路程式設計概論 Intro. to Network Program Design	3		資工系 Dept. of Computer Science	
		網路通訊原理 Network Communication Principle		3	資工系 Dept. of Computer Science	
		計算機圖學概論 Intro. to Computer Graphics	3		資工系 Dept. of Computer Science	
		影像處理概論 Intro. to image processing		3	資工系 Dept. of Computer Science	
		數值方法 Numerical Methods		3	資工系 Dept. of Computer Science	
本系專業選修（至少 9 學分） Elective courses of our department (at least 9 credits)			至少 9 At least 9		至少 9 學分，且需為大三、大四及研究所專業選修 At least 9 credits, elective courses in junior, senior years and graduate level are required.	
共同必修 Common compulsory courses			28-32		校必修：含共同必修 28 學分（外語課程必修 8 學分，本系外語課程至多採計 12 學分） School compulsory courses: including 28 credits of common compulsory courses (8 credits for foreign language compulsory course; maximum of 12 credits will be accounted for our department's foreign language courses).	
最低畢業學分 Minimum credits for graduation			**129**			