

國立交通大學電子工程學系跨域學程實施要點

NCTU Department of Electronics Engineering Implementation Guidelines for Cross-Disciplinary Program

106年3月29日系課程會議通過

106年4月21日院課程會議通過

- 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、跨域學程係指由交通大學的學系、研究所、或學院提出模組課程，模組課程應包含該領域基礎核心知識，且總學分數以30學分為原則（最低可為28學分，最高不可超過32學分），學生修習跨域學程，其課程將包含所屬學系的跨域學程模組課程以及第二專長系所或學院的跨域學程模組課程，並可於畢業證書上加註第二專長模組課程為「跨域專長」。

The cross-disciplinary program here means the cross-disciplinary module curriculum proposed by the departments, institutes or colleges in National Chiao Tung University. Module curriculum should include the core knowledge curriculum of the field and the total credits will be based on 30 credits (the minimum 28 credits and no more than 32 credits). The cross-disciplinary program that students take will include the cross-disciplinary program module curriculum of the department they belong to as well as the cross-disciplinary program module curriculum from the second specialty department or college. The module curriculum of the second specialty could be remarked as “Cross-Disciplinary Specialty” on the diploma.

- 三、本要點修業規定

Policies of these Guidelines

1. 本系學生欲申請修習跨域學程者

For the student of our department who would like to take cross-disciplinary program

- (1) 得於下學期向本系提出申請，申請時註明欲申請的第二專長系所或學院，申請期限將由本系課程委員會提前一個月進行公告，公告中說明需準備的審查資料以及當年度本系開放給本系學生修讀跨域學程的名額，申請案經本系課程委員會審查通過後，需送到第二專長系所或學院審查，通過雙邊審查後，方可進入跨域學程。

The application could be submitted to our department during the second semester. The department or college of the second specialty that the student would like to apply for must be remarked on the application form, and the application deadline would be announced one month in advance by the Curricular Committee at our department. The information of evaluation documents needed to be prepared as well as the quota opened to the students of our department to study for this program in the given year will be released on the announcement. The application should be sent to the department or college of the second specialty for evaluation after it is approved by the Curricular Committee at our department. Students could only take the cross-disciplinary program after evaluation by both sides.

- (2) 本系學生修習跨域學程的課程，列示於『電子工程學系跨域學程本系學生必修科目表』，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），本系專業選修課程（至少22學分，其中至少12學分為大三、大四或研究所專業課程），以及第二專長系所或學院的跨域模組課程（以下簡稱他系跨域模組課程），畢業學分以不低於129學分為原則。他系跨域模組課程認定為跨域專長，於畢業證書本系名稱後加註此跨域專長。

The courses of cross-disciplinary program studied by students in our department should be listed on “The Required Course List for the students at our department study cross-disciplinary program in department of Electronics Engineering.” The courses include required courses of the university (including 28 credits of general education subjects), core curriculum at our department (51 credits), professional elective course at our department (at least 22 credits, of which at least professional course of junior, senior or institute are 12 credits), and the cross-disciplinary module curriculum of the second specialty department or college (hereinafter referred to as cross-disciplinary module curriculum at other department) with at least 129 graduate credits. The cross-disciplinary module curriculum at other department would be recognized as cross-disciplinary specialty, and it will be remarked after the title of our department on the diploma.

- (3) 本系學生修習跨域學程，若無法修畢跨域學程課程，得選擇放棄跨域學程，改修習原電子工程學系的學士學位課程。

For students at our department who study for cross-disciplinary program but are not able to complete the program, they shall give up the cross-disciplinary program and transfer to study for the bachelor degree program at the original department of electronics engineering.

2. 外系學生欲申請修習跨域學程且選擇本系做為其跨域專長者

For student of other departments who would like to study for cross-disciplinary program and choose our department as their cross-disciplinary specialty.

- (1) 得於下學期向其所屬學系（以下簡稱原系）提出申請，通過原系以及本系的雙邊審查後，方可進入跨域學程。

They could submit the application to the department that they belong to during the second semester, they could only take the cross-disciplinary program after approved by both their original department and our department.

- (2) 外系學生修讀跨域學程且選擇本系做為其跨域專長者，其課程包含：原系要求之校必修、基礎必修課程及跨域模組課程，以及列示於『電子工程學系跨域模組課程必修科目表』的模組課程，畢業學分達到原系要求，並於畢業證書原系名稱後加註電子工程為其跨域專長。

The courses for the students of other departments who would like to study for cross-disciplinary program and choose our department as their cross-disciplinary specialty include required courses of the university, core curriculum at their original department, cross-disciplinary module curriculum at their original department, and the module curriculum listed on “The Required Course List for the students study cross-disciplinary module curriculum in department of Electronics Engineering” with graduation credits meet requirements of original department. The Electronics Engineering will be remarked as their cross-disciplinary specialty after the title of their original department on the diploma.

3. 若外系與本系已另訂定兩系雙向鎖定之跨域學程實施要點，則相關學生應依該實施要點提出修習跨域學程申請。

If our department and other department has already set up cross-disciplinary program between them, the students should submit the application to the department that they belong.

- 四、 本系指定一名專任教師擔任跨域學程導師，與外系所或學院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 assigned one full-time teacher to be the mentor of the cross-disciplinary program and formed mentor group with teachers of cross-disciplinary program at other department or college to give guidance to cross-disciplinary program students.

- 五、 為鼓勵不同系所或學院合作提出跨域共授課程，由兩位以上教師開授跨領域之創新整合式課程，得依本校教師授課鐘點核計原則第九條第六款規定，教師的授課鐘點數可按到場時數計，但以開課前該門課程之實際簽呈為依據。

In order to encourage different departments or colleges working together for the proposal of cross-disciplinary curriculum, the number of teaching hours for the innovating integrated curriculum offered by more than two teachers could be calculated by the actual time of teaching according to Subparagraph 6, Article 9 of National Chiao Tung University Teaching Hours Accounting Principle; however, it will be in accordance with the official approval of the curriculum before the course starts.

- 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 these guidelines, 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。

These guidelines were approved by Curricular Committee at university level and then submitted to the Council of Academic Affairs for approval-for-reference before putting it into practice; the same shall be done upon any amendment thereto.

電子工程學系 跨域模組課程 必修科目表

Compulsory subject list of Department of Electronics Engineering Coss-disciplinary Program

類別 Category	選別 Type	科目名稱 Course Name	學分 Credit		開課 系所 Dept. giving the course	備註 Notes
			上學期 1st	下學期 2nd		
<p>本系跨域模組 (30 學分) Cross- Disciplinary module curriculum of our department</p> <p>修畢於畢業證 書加註：「跨 域專長：電子 工程」</p> <p>It could be remarked as “Cross- Disciplinary Specialty : Electronic engineering” on the diploma after the module curriculum is completed.</p>	<p>必修 (12 學分) Compulsory courses (12 credits)</p>	邏輯設計 Logic design	3		<p>電子系 Dept. of Electronics Engineering</p>	<p>若為原系之 必修課程， 不足之學分 得於本系跨 域模組選修 課任選。 Excluding compulsory courses of the original department</p>
		電路學 Introduction to Circuit Theory	3			
		電子學 (一) Electronics (I)	3			
		電子學 (二) Electronics (II)		3		
	<p>選修 (18 學分) Elective courses (18 credits)</p>	電磁學 Electromagnetics	3		<p>電子系 Dept. of Electronics Engineering</p>	<p>任選 6 科 Optional 6 subjects</p>
		電磁波 Electromagnetic Wave	3			
		控制系統導論 Introduction to Control Systems	3			
		數位訊號處理 Digital Signal Processing	3			
		超大型積體電路設計導論 Introduction to VLSI Design	3			
		類比積體電路導論 Introduction to Analog Integrated Circuits	3			
		電力電子導論 Fundamental of Power Electronics	3			
		數位電路與系統 Digital Circuits and Systems	3			
		通訊原理 Principles of Communication Systems	3			
		數位通訊原理 Principles of Digital Communication	3			
		半導體元件物理 Semiconductor Device Physics	3			
	材料科學導論 Introduction to Materials Science	3				

	電子設計自動化概論 Introduction to Electronic Design Automation	3		
	固態物理 (一) Solid State Physics (I)	3		
	固態物理 (二) Solid State Physics (II)	3		
	半導體工程 Semiconductor Engineering	3		
	光電導論 Introduction to Optoelectronics	3		
	計算機組織 Computer Organization	3		
	訊號與系統 Semiconductor Engineering	3		
	演算法 Algorithms	3		
	數值分析 Numerical Analysis	3		
	量子力學導論 Introduction to Quantum Mechanics	3		