

# 國立交通大學教育研究所「學習科學」跨域學程實施要點

## National Chiao Tung University The Institute of Education

### Implementation Guidelines for Learning Sciences Cross-Disciplinary Program

107.10.24 107 學年度第 2 次課程委員會議修正通過

Approved in the 2nd Curriculum Meeting of Academic Year 2018 (24 October 2018)

- 一、依據國立交通大學跨域學程實施辦法，國立交通大學教育研究所(以下簡稱本所)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。

Article One These Implementation Guidelines are prescribed by National Chiao Tung University Institute of Education (hereinafter referred to as Our Institute) based on NCTU Cross-Disciplinary Program Implementation 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、跨域學程係指由學系、研究所，或學院提出跨域學程模組課程，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(以下簡稱原系)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」。

Article Two 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

Article Three Policies of these Guidelines

1. 外系學生欲選擇本所「學習科學」跨域學程作為其跨域專長者

1. For students of other departments who would like to take the Learning Sciences Cross-Disciplinary Program and choose Our Institute as their cross-disciplinary specialty.

- (1) 得於每學年度公告申請期限內向原系提出申請，通過原系以及本所的雙邊審查後，方可進入跨域學程。

(1) They could submit the application to the department that they belong to within the dates of annual announcements by faculty, they could only take the cross-disciplinary program after approved by both their original department and Our Institute.

- (2) 外系學生修讀跨域學程且選擇本所做為其跨域專長者，其課程包含：校必修(含共同必修 28 學分)，原系基礎必修課程，原系跨域模組課程，以及列示於『學習科學跨域模組課程必修科目表』的模組課程，畢業學分以 128 學分為原則，並於畢業證書原系名稱後加註學習科學為其跨域專長。

(2) The courses for the students of other departments who would like to study for cross-disciplinary program and choose Our Institute as their cross-disciplinary specialty include required courses of the university (including 28 credits of general education subjects), 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 studying Learning Sciences cross-disciplinary module curriculum in the Institute of Education” with at least 128 graduate credits. Learning Sciences will be remarked as their cross-disciplinary specialty after the title of their original department on the diploma.

- 四、本所指定一名專任教師擔任跨域學程導師，專責輔導跨域學程的學生。

Article Four Our Institute assigned one full-time teacher to be the mentor of the cross-disciplinary program 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 9 條第 6 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。

Article Five In order to encourage different departments or colleges working together for designing cross-disciplinary curriculum, teaching hours for the innovative cross-disciplinary curriculum offered by more than two teachers could be calculated based on the actual teaching hours according to Subparagraph 6, Article 9 of National Chiao Tung University Teaching Hours Accounting Principle. However, the calculation will only be eligible with the official approval obtained before the curriculum starts.

- 六、修讀跨域學程學生，擬終止修讀跨域學程者，應至教務處登記，撤銷其跨域學程資格。撤銷跨域學程資格之學生，日後甄選進入本中心修讀教育學程者，不得將已修習之師培中心所開跨域課程學分抵免為教育專業課程學分。曾經先修教育專業基礎課程且繳交教育學程學分費者不在此限。

Article Six Students taking a cross-disciplinary program and intending to terminate the study in the cross-disciplinary program shall register with the Office of Academic Affairs for withdrawal from the program. Students who have withdrawn from the program are not allowed to transfer the credits they have taken to the Teacher Education Program they

take afterwards. Exceptions are made for students who have previously taken a Foundation Course for the Education Profession (for which the course credit fee has been paid) before enrolling in the Teacher Education Program.

七、修讀教育學程之師資生，不得將已採認之教育專業學分抵免為本跨域學程之學分。

Article Seven Students who are taking the Teacher Education Program are not allowed to transfer the credits they have taken previously from the Learning Sciences Cross-Disciplinary Program to the Teacher Education Program.

八、學生修讀跨域學程模組課程於修業年限內不須另繳學分費，於延長修業期間一學期修習九學分以下者繳交學分費及學雜費基數，修習十學分以上者繳交全額學雜費。

Article Eight Students taking a cross-disciplinary program do not have to pay extra credit fees within their maximum years of study. In the case of an extension of study, students who take less than nine credits per semester will have to pay the credit fees and tuitions; students who take more than ten credits per semester will have to pay full tuitions.

九、本要點如有未盡事宜，悉依本校學則及其他相關規定辦理。

Article Nine Any other issues arising from matters not specified in these guidelines shall be handled in accordance with the University's constitution and regulations.

十、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。

Article Ten These guidelines were approved by the University's Curricular Committee and 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.

### 教育研究所「學習科學」跨域模組課程必修科目表

The Required Course List for the students study Learning Sciences cross-disciplinary module curriculum in Institute of Education

類別 Category	科目名稱 Course Name	學分 Credit	開課系所 Department	備註 Remark			
本所跨域模組 (28 學分) Cross-disciplinary modules at Our Institute (28 credits) 修畢於畢業證書 加註 『跨域專長：學 習科學』 It could be remarked as “Cross-disciplinary Specialty : Learning Sciences” on the diploma after the module curriculum is completed.	學習與教學 Learning and Instruction  基礎課程 Basic Courses	教育心理學 Educational Psychology	2	師培中心 EDU	應選左列 基礎課程 至少 20 學 分  The student should take and pass at least 20 credits from the basic courses listed here.		
		學習與閱讀理解策略 Learning How to Learn: Strategies for Reading and Learning	2	師培中心 EDU			
		課程設計與發展 Curriculum Design and Development	2	師培中心 EDU			
		科學教育 Science Education	2	師培中心 EDU			
		STEM 教育 Science, Technology, Engineering, and Mathematics Education	2	師培中心 EDU			
		學習科學導論 Introduction of Learning Sciences	2	教育碩 IED			
		初等教育統計 Int. to Educational Statistics	2	教育碩 IED			
		教育研究法 Educational Research Methods	2	教育碩 IED			
		數位學習內 容與環境 Digital Learning Content and Environments	電腦與教學 Computers and Education	2		師培中心 EDU	
			教學媒體與操作 Instructional Media and Operations	2		師培中心 EDU	
			數位學習導論 Foundation of E-learning	2		教育碩 IED	
		認知神經科 學與腦機介 面 Cognitive Neuroscience and Brain Computer Interface	認知心理學 Cognitive Psychology	2		師培中心 EDU	
			注意力與學習 Attention and Learning	2		師培中心 EDU	
		學習與教學 Learning and Instruction	發展心理學研究 Research in Developmental Psychology	3		教育碩 IED	應選左列 進階課程 至少 8 學 分 The student
			科學學習心理學 Research in Psychology of Learning Science	2		教育碩 IED	
實驗設計 Research Methodology	3		教育碩 IED				

	進階課程 Advanced Courses		科學教育研究 Research in Science Education	2	教育碩 IED	should take and pass at least 8 credits from the Advanced courses listed here.	
			數位課室教學策略 Strategies for technology integration in classrooms	2	教育碩 IED		
			動機理論與數位學習 Human Motivation and E-learning	3	教育碩 IED		
			建構主義在科學教育上的應用 The Practice of Constructivism in Science Education	2	教育碩 IED		
			科學史與科學本質 History and Nature of Science	2	教育碩 IED		
		數位學習內 容與環境 Digital Learning Content and Environments		網路素養與倫理專題 Special Topics in Internet Literacy and Ethics	3		教育碩 IED
				數位學習教材研發與評鑑 The Systematic Design of Instruction	2		教育碩 IED
				數位學習專案管理與評鑑 E-learning Project Management and Evaluation	2		教育碩 IED
				新興科技在教育上的應用 Application of Emerging Technologies in Education	3		教育碩 IED
				網路化科學學習 Web-based Science Learning	2		教育碩 IED
			數位遊戲與學習 Digital Gaming and Learning	3	多媒體碩 ILE		
			APP 設計與教育應用 APP Development and Application in Education	2	教育碩 IED		
			行動學習設計 Design of Mobile Learning Environments	2	教育碩 IED		
	進階課程 Advanced Courses	認知神經科 學與腦機介 面 Cognitive Neuroscience and Brain Computer Interface		認知神經科學(I):注意力、發 展與學習 Cognitive Neuroscience (I): Attention, Development and Learning	3	教育碩 IED	
				認知神經科學(II):記憶與科學 學習 Cognitive Neuroscience (II): Memory and Science Learning	2	教育碩 IED	
				人工智慧在教育上的應用 The Application of Artificial Intelligence in Education	2	教育碩 IED	
				大數據在教育上的應用 Big Data and Education	2	教育碩 IED	
				機器學習在教育上的應用 The Application of Machine Learning in Education	2	教育碩 IED	
				腦機介面在教育上的應用 Brain Computer Interface in Education	2	教育碩 IED	
	<b>至少需修習 28 學分 Minimum credits</b>						