

國立交通大學生物資訊及系統生物研究所跨域學程實施要點

NCTU The Institute of Bioinformatics and Systems Biology Implementation Guidelines for Cross-Disciplinary Program

- 一、 依據國立交通大學跨域學程實施辦法，國立交通大學生物資訊及系統生物研究所(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 The Institute of Bioinformatics and Systems Biology (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、 本要點所稱跨域學程係指由各學系、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，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。

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 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、 本要點實施對象

Article Three Implementation objects of these Guidelines

1. 凡本校 104 學年度 (含) 之後入學之學士班學生均適用本要點。
1. People applicable to this program: undergraduate students who are or after class of 2019
2. 外系學生欲修習跨域學程且選擇本系做為其跨域專長者
2. For students of other departments who would like to study for cross-disciplinary program and choose our department as their cross-disciplinary specialty
 - (1) 得於大一下學期或大二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 during the second semester of the first year or the second semester of the second year, 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『生物資訊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生物資訊為其跨域專長。
 - (2) The courses for the students of other departments who would like to study for cross-disciplinary program and choose our department 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 study cross-disciplinary module curriculum in institute of Bioinformatics” with at least 128 graduate credits. The Bioinformatics 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，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。

Article Four Our institute 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。

Article Five 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。

Article Six 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、本要點經所課程委員會、院課程委員會及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 Seven These guidelines were approved by the institute Curricular Committee, confirmed by the Curriculum Committees of the home College and the University, 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.

生物資訊跨域模組課程 必修科目表(B)

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

類別 Category	科目名稱 Course Name	學分 Credit	開課系所 Department	備註 Remark
(一)生物資訊跨域模組 (共 30 學分，必修 12 學分、選修 18 學分) Cross-disciplinary modules at our institute (30 credits) 修畢於畢業證書加註『跨域專長：生物資訊』 It could be remarked as "Cross-Disciplinary Specialty: Bioinformatics" on the diploma after the module curriculum is completed.	普通生物學(一)或近代生物學(一) General Biology(I)	3	生科系 Department of Biological Science and Technology	必修 12 學分 Required 12 credits
	計算生物概論 Introduction to Computational Biology	2	生科系 DBSB	
	計算生物實驗 Computational Biology Lab.	1	生科系 DBSB	
	生物化學(一) Biochemistry(I)	3	生科系 DBSB	
	分子生物學(一) Molecular Biology (I)	3	生科系 DBSB	選修 18 學分 Elective 18 credits
	生物統計 Biostatistics	3	生科系 DBSB	
	生物機器學習 Machine Learning for Biology	3	生科系 DBSB	
	生科應用數學 Applied Mathematics for Biological Science and Technology	3	生科系 DBSB	
	結構生物資訊	3	生科系	

Structural Bioinformatics		DBSB
生物序列分析與高通量技術 Biological Sequence Analysis and High Throughput Technologies	3	生科系 DBSB
分子演化 Molecular Evolution	3	生科系 DBSB
生物影像資訊學 Bioimage Informatics	3	生資所 Ins. of Bioinformatics and Systems Biology
統計熱力學 Statistical Thermodynamics	3	生資所 Ins. of Bioinformatics and Systems Biology
分子模擬 Molecular Simulation	3	生資所 Ins. of Bioinformatics and Systems Biology
計算化學特論 Selected topics in Computational Chemistry	3	生科系 DBSB
智慧型機器學習與電腦輔助藥物設計 Intelligent Machine Learning and Computer-aided Drug Design	3	生資所 Ins. of Bioinformatics and Systems Biology
計算生物學-建模與預測 Computational Biology: Modeling and Prediction	3	生資所 Ins. of Bioinformatics and Systems Biology
總學分 (30 學分) Total Credits (30 credits)	30	