

# 國立陽明交通大學資訊工程學系「金融科技跨域學程」實施要點

National Yang Ming Chiao Tung University

Department of Computer Science

## Implementation Guidelines for Cross-Disciplinary Program of Financial technology

資訊工程學系 110 學年度第 4 次課程委員會修訂(110 年 10 月 25 日)

110 學年度第 3 次校課程委員會通過(110 年 12 月 2 日)

110 學年度第 2 次教務會議核備通過(110 年 12 月 16 日)

- 一、依據國立陽明交通大學跨域學程實施辦法，國立陽明交通大學資訊工程學系(以下簡稱本系)為鼓勵大學部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，特訂定本實施要點。

These Implementation Guidelines are prescribed by National Yang Ming Chiao Tung University Department of Computer Science (hereinafter referred to as Our Department) based on NYCU 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、依據國立陽明交通大學跨域學程實施辦法，本系學生修習「金融科技跨域學程」(以下簡稱本學程)，於修畢後可於畢業證書上加註「金融科技」為跨域專長。

According to NYCU Implementation Guidelines for Cross-Disciplinary Program, students in CS department could be remarked as “Financial technology” on the diploma once they complete this program.

### 三、本要點實施細節

1. 適用對象：本校資訊工程學系申請金融科技跨域學程的學生適用本要點。

#### 2. 申請程序：

- (1) 本系學生欲修習本學程者得於每學年下學期向本系提出申請，經本系及資訊管理與財務金融學系課程委員會審查通過後，方可修習本學程。

#### (2) 修課規定：

- i. 本系 107 學年度(含)以前入學適用本學程的課程列示於「資訊工程學系『金融科技跨域學程』必修科目表」，其課程包含：校必修(含共同必修 26 學分)，本系基礎必修課程(67 學分)，以及金融科技跨域模組(31 學分)，畢業學分至少 128 學分。
- ii. 本系 108 學年度(含)以後入學本學程的課程列示於「資訊工程學系『金融科技跨域學程』必修科目表」，其課程包含：校定必修(含共同必修 26 學分)，基礎學科 14 學分，必修 31 學分，學程選修 12 學分，本系必修及主題學程課程(參閱本系必修科目表)，本系專業選修課程(至少 9 學分)(需修本系所開授的各專業科目，含大學部、研究所選修課程)，以及金融科技跨域模組(31 學分)，畢業學分至少 128 學分。本系甲組選擇跨域學程為畢業條件者，依本系必修科目表規定。

- (3)修習本學程之學生，若無法完成(2)中所規定之課程，可回復修習原資訊工程學系的學士學位課程。
- (4)除必修科目表備註可以抵免之科目外，其餘抵免皆需遞送免修申請表。
- (5)跨域模組課程與學生本系應修課程及學分重複者，由資訊管理與財務金融學系指定之相關選修課程補足。

#### Guidelines in detail

- 1)People applicable to this program: undergraduate students who are Department of Computer Science apply for Cross-Disciplinary Program of Financial technology .
- 2)Procedure to apply for this program:
  - (I)Students may submit applications to the CS department during the second semester of every year. The application will be evaluated by the Curricular Committees at the CS and the IMF departments, respectively. Students are enrolled in the cross-disciplinary program only after their applications have been approved by both sides.
  - (II)Program requirements:
    - i. Applicable to students enrolled before the academic year Jul. 2019.

Courses included in this program are listed on “The Required Course List for the students at our department study cross-disciplinary program in department of Electrical and Computer Engineering”. Courses are classified as:

      - Required courses of the university: 26 credits.
      - Core curriculum at CS department: 67 credits.
      - Cross-disciplinary program module courses of Financial technology: 31 credits.

At least 128 credits are required for graduation.
    - ii. Applicable to students enrolled after the academic year Aug. 2019.

Courses included in this program are listed on “The Required Course List for the students at our department study cross-disciplinary program of Financial technology”. Courses are classified as:

      - Required courses of the university: 26 credits.
      - Core curriculum at CS department: 66 credits.
      - Cross-disciplinary program module courses of Financial technology: 31 credits.

At least 128 credits are required for graduation.
  - (III)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 Computer Science.
  - (IV)Besides compulsory courses that have been marked as waivable, students may submit

applications for waiving other courses.

(V) If any course in the cross-disciplinary program module has the same name or curriculum as one of the compulsory courses of the CS department that the student has taken and passed, the credits of the course may not count in the program. The course should be replaced with a related elective course appointed by the department of Information Management and Finance.

四、本系之單位主管或其指定之專任教師擔任跨域學程召集人，統籌執行學程各項事宜。學程召集人需指定至少一名專任教師擔任跨域學程導師，專責輔導跨域學程學生。

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，得依本校教師授課時數核計原則，教師的授課時數可按到場時數計，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 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. However, the calculation will only be eligible with the official approval obtained before the curriculum starts.

六、修讀跨域學程學生在獲核准前已修習及格之科目學分，若合於第二專長模組課程應修課程學分，得經第二專長的系所或學院審查同意後，予以追加採認。

The credits of cross-disciplinary program module curriculums obtained before the student has been admitted to take the cross-disciplinary program can only be counted if the credits are recognized by the department or college of the second specialty.

七、修讀跨域學程學生之選課手續應於加退選期限內完成，且每學期所修之第二專長模組課程科目、學分及成績均列記於其歷年成績表內。

Students taking a cross-disciplinary program shall enroll courses of the program by the deadlines of course registration. The courses, credits, and grades of the cross-disciplinary program module curriculums should be listed in the annual transcripts in each semester.

八、學生之第二專長模組課程學分及成績分別併入學期修讀學分總數及學期平均成績計算。

The courses, credits, and grades of cross-disciplinary program are incorporated into the student's semester credits and average grade.

九、修讀跨域學程學生，擬終止修讀跨域學程者，應至教務處申請撤銷其跨域學程資格，並回復至所屬學系修課規定。其已修習及格之第二專長模組課程學分，經所屬學系核定，報教務處備查後得抵免其所屬學系選修課程學分。

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 and follow the regulations and requirements of major department. The passed courses of the cross-disciplinary program can be used as credit waiver against the core courses of the major with the approval of the Major department. The approval should be submitted to the Office of Academic Affairs for archiving purposes.

十、修讀跨域學程學生凡符合跨域學程規定畢業者，其畢業生名冊、歷年成績表及學位證書應加註跨域專長名稱。但畢業時如尚未修滿跨域學程規定之科目與學分，不得申請發給有關跨域學程之任何證明。

For students who earn sufficient credits and meet the requirements of the cross-disciplinary program, the department of the cross-disciplinary program will be noted in the graduates roster, transcripts, and diplomas, otherwise, no certificate of the cross-disciplinary program will be issued.

十一、本要點如遇修訂，須主動知會資訊管理與財務金融學系。

CS department should notify IMF department if the guidelines need to be revised.

十二、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.

十三、本要點經系、院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。

These guidelines were approved by Curricular Committee at department, college and 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.

資訊工程學系「金融科技跨域學程」必修科目表

Courses for CS Department

Cross-disciplinary Program of Financial technology

類別 Category	選別 Classification	科目名稱 Courses	學分 Credits		開課系所 Dept.	備註 Remarks
			上學期 Fall Semester	下學期 Spring Semester		
<p>本系基礎必修 (67 學分) 107 學年度(含)以前入學適用 Core curriculum at our department (67 credits) Applicable to students enrolled before the academic year Jul. 2019.</p>	<p>必修+專業選修=67 學分 必修：請參閱本系各組必修科目表 專業選修：67 學分-各組必修學分</p> <p>以 107 學年度入學為例， 資訊工程組：必修 57 學分+專業選修 10 學分 資電工程組：必修 60 學分+專業選修 7 學分 網路與多媒體工程組：必修 57 學分+專業選修 10 學分 備註：可以「金融科技跨領域專題(一)(二)」申請免修「資訊工程專題(一)(二)」。</p> <p>Required Courses + Professional Elective Courses = 67 credits Required Courses: Please refer to the required course list for each program at our department Professional Elective Courses: 67 credits for required course of each program</p> <p>Take the student enrolled at 107 academic year for example, Computer Science and Engineering Program: Required Courses 57 credits + Professional Elective Courses 10 credits Computer Science and Electrical Engineering Program: Required Courses 60 credits + Professional Elective Courses 7 credits Networking and Multimedia Engineering Program: Required Courses 57 credits + Professional Elective Courses 10 credits</p> <p>Note : Cross-disciplinary Project (I) (II) can be exempted from Computer Science and Engineering Projects(I)(II). Credits can be replaced by other courses offered in the Computer Science Department.</p>					
<p>本系學分 (66 學分) 108 學年度(含)以後入學適用 Core curriculum at our department (66 credits) Applicable to students enrolled after the academic year Aug. 2019.</p>	<p>基礎學科 14 學分，必修 31 學分，學程選修 12 學分，本系必修及主題學程課程 (參閱本系必修科目表)，本系專業選修課程(至少 9 學分)(需修本系所開授的各專業科目，含大學部、研究所選修課程) 備註：可以「金融科技跨領域專題(一)(二)」申請免修「資訊工程專題(一)(二)」。</p> <p>Basic Science = 14 credits Compulsory courses = 31 credits Elective Program Courses = 12 credits Elective Professional Courses = 9 credits (All elective courses offered by the Dept. of CS (including elective courses in both undergraduate and graduate programs)</p> <p>Note :</p>					

	Cross-disciplinary Project (I) (II) can be exempted from Computer Science and Engineering Projects(I)(II). Credits can be replaced by other courses offered in the Computer Science Department.						
金融科技跨域模組 (31 學分) 修畢於畢業證書加註「跨域專長：金融科技」 Cross-disciplinary modules at other department (31 credits)  Could be remarked as “Cross-Disciplinary Specialty : Financial technology” on the diploma	共同必修 (10 學分) Compulsory Courses (10 credits)	投資學 Investment		3	資財 IMF		
		金融科技跨領域專題(一)(二) FinTech Cross-disciplinary Projects (I) (II)	2	2	資工/ 資財 CS/IMF	可以資工系「資訊工程專題(一)(二)」申請免修	
		企業講座 Seminar on Business		3	資工/ 資財 CS/IMF	詳細課程名稱依當學期公告。	
	財務金融模組 (9 學分) Financial technology modules (9 credits) 右列課程四選三	經濟學概論 Introduction to Economics	3		資財 IMF/通識中心	可以管理學院共同課程「經濟學(一)或(二)」或通識教育中心「經濟學原理」申請抵免	
		金融科技概論 Introduction to Financial Technology	3		資財 IMF		
		期貨與選擇權 Futures and Options	3		資財 IMF		
		財務管理 Financial Management	3		資財 IMF		
		選修 (12 學分) Elective Courses (12 credits)	數理統計 Mathematical Statistics	3		資財 IMF	111 學年度起適用，選修需修習開課系所為資財之課程至少 6 學分。
		財務工程導論 Introduction in Financial Engineering	3		資財 IMF		
	財務計量經濟學 Financial Econometrics	3		資財 IMF			
	系統分析與設計 System Analysis and Design	3		資財 IMF			
	商用資料通訊 Business Data Communications	3		資財 IMF			
	貨幣銀行與金融風暴 Money, Banking , and Financial Crisis	3		資財 IMF			

	國際財務管理 Multinational Business Finance	3	資財 IMF
	財務風險管理 Financial Risk Management	3	資財 IMF
	資訊安全 Information Security	3	資財 IMF
	資料科學 Data Science	3	資財 IMF
	人工智慧與金融科 技實務 Practices of Artificial Intelligence and Financial Technology	3	資財 IMF
	財務報表分析 Financial Statement Analysis	3	資財 IMF
	人工智慧 Artificial Intelligence	3	資工 CS
	資料探勘 Data Mining	3	資工 CS
	電腦安全總整與實 作 Computer Security Capstone	3	資工 CS
	資料視覺化與視覺 分析 Data Visualization and Visual Analytics	3	資工 CS
	巨量資料分析技術 與應用 Big Data Analytics Techniques and Applications	3	資工 CS
	資料庫系統概論 Intro. to Database Systems	3	資工 CS
	人工智慧概論 Intro. to Artificial Intelligence	3	資工 CS
	機器學習概論 Intro. to Machine Learning	3	資工 CS

	人工智慧總整與實作 Artificial Intelligence Capstone	3	資工 CS
	計算機網路概論 Intro. to Computer Networks	3	資工 CS
	密碼學概論 Intro. to Cryptography	3	資工 CS
	網路程式設計概論 Intro. to Network Programming	3	資工 CS
	數值方法 Numerical Methods	3	資工 CS
	校必修 Common Required Courses	26	校必修：含共同必修 26 學分（含外語課程必修 8 學分），至多採計 40 學分 Required courses of the university (including 26 credits of general education subjects, 8 credits of foreign language course inclusive with the maximum 40 credits countable)
	最低畢業學分 Minimum Credits Required for Graduation	128	
<p>※資工系重要課程擋修制度請參閱本系學士班修業辦法。</p> <p>※資料探勘為資訊工程學系「金融科技跨域學程」模組課程之第二專長總整課程。</p>			