

# 國立陽明交通大學 114 學年度 財務工程 學分學程實施辦法

- 一、依據本校各學院系設置學程實施細則，配合本校學生之基本訓練，提供有關財務與數量的整合型「財務工程」學程設計。
- 二、凡 台灣聯合大學系統 大學部學生均可修讀本學程。修滿本學程規定之科目及學分者，由本校發給學程修畢證明。
- 三、本學程由本校各學院之相關系所共同提供課程，經學程召集人認可後予以承認。如學生因故需至外校修習本學分學程之課程，亦經學程召集人認可後予以承認。
- 四、本學程必需修滿核心課程 15 學分，選修課程至少 12 學分，總計至少 27 學分。具體課程如「財務工程學分學程課程規劃表」所列。
- 五、本學程委員由相關系所之教師組成，並推舉一位召集人，擔任學程委員會議之召集及執行學程之日常行政事務。
- 六、本學程之課程規劃表，由學程委員會議訂定及修正之。

## 財務工程學分學程課程規劃表

- 一、學程名稱：財務工程 (Financial Engineering)
- 二、課程名稱及開課單位：(總學分必需修滿 27 學分)

### A 核心課程(15 學分)

編號	課程名稱	開課單位	學分	備註
1	投資學	資財系、財金碩	3	必修
2	期貨與選擇權	資財系、財金碩	3	必修
3	財務工程 (導論)	資財系、財金碩	3	必修
4	數理統計	資財系、管科系	3	必修
5	財務計量經濟學	資財系、財金碩	3	必修

### B 選修課程 (至少 12 學分)

編號	課程名稱	開課單位	學分	備註
工具課程：(至少 6 學分)				
1	隨機過程	本校各系所	3	
2	財務數學	本校各系所	3	
3	作業研究	本校各系所	3	
4	數值分析(方法)	本校各系所	3	
5	(偏)微分方程	本校各系所	3	
6	(財務)時間序列(分析)	本校各系所	3	
7	工程數學	本校各系所	3	
8	(計算機概論或物件導向)程式設計	本校各系所	3	
財工領域課程：(至少 6 學分)				
1	債券市場	財金碩	3	
2	(財務)風險管理	資財系、財金碩	3	
3	金融機構與市場	資財系、財金碩	3	
4	金融投資決策	資管碩	3	
5	衍生性商品理論	財金碩	3	
6	貨幣銀行與金融風暴	資財系	3	
7	金融創新	財金碩	3	
8	電腦輔助財務模型	資財系、財金碩	3	
9	實質選擇權與策略投資	財金碩	3	
10	金融科技與金融機構	資財系、財金碩	3	

- 三、學程委員：李漢星、黃星華、郭家豪、謝文良、鍾惠民
- 四、召集人姓名：戴天時 單位：資訊管理與財務金融學系財務金融碩士班

# National Yang Ming Chiao Tung University Regulations for Financial Engineering Program Curriculum

1. In accordance with the "National Yang Ming Chiao Tung University Regulations of Stipulating Program by Colleges," and in cooperation with students' basic trainings in NYCU, the Financial Engineering Program offers integrated course design on finance and quantification.
2. All undergraduate students in UST may apply for the Program. Students having completed the required courses and acquired credits will receive a certificate issued by NYCU.
3. The Program is jointly offered by related departments and institutes of NYCU, and the courses of the Program approved by the chairperson will be recognized. If students need to study the courses which are included in this program in other universities, the courses approved by the chairperson will be also recognized.
4. To obtain the Program certificate, students are required to complete at least 27 credits, including 15 credits of required courses and at least 12 credits of elective courses. The program courses are described in the "Curriculum Planning List."
5. The Program Committee consists of the teachers of related departments and institutes. One chairperson should be elected to convene the Program Committee Meeting and administrate daily administrative affairs of the program.
6. The curriculum planning of the program is stipulated and amended by the Program Committee.

## Curriculum Planning List

### 1. Program: Financial Engineering

#### 2. Course Title and Organization (27 credits requirement in total):

##### A. Core Courses (15 credits)

No.	Course Title	Offered by	Credits	Remarks
1	Investment	DIF, IOF	3	Required
2	Futures and Options	DIF, IOF	3	Required
3	Financial Engineering (Introduction)	DIF, IOF	3	Required
4	Mathematical Statistics	DIF, MS	3	Required
5	Financial Econometrics	DIF, IOF	3	Required

##### B. Elective Courses (12 or more credits)

No.	Course Title	Offered by	Credits	Remarks
<b>Tool Course: (6 or more credits)</b>				
1	Stochastic Process	All Dep.	3	
2	Financial Mathematics	All Dep.	3	
3	Operations Research	All Dep.	3	
4	Numerical Analysis (Methods)	All Dep.	3	
5	(Partial) Differential Equations	All Dep.	3	
6	(Financial) Time Series (Analysis)	All Dep.	3	
7	(Engineering Mathematics)	All Dep.	3	
8	(Introduction of Computer Science or Object-Oriented) Programming	All Dep.	3	
<b>Financial Engineering Field Course: (6 or more credits)</b>				
1	Bond Market	IOF	3	
2	(Financial) Risk Management	DIF, IOF	3	
3	Financial Institutions and Markets	DIF, IOF	3	
4	Financial Investment Decision	IIM	3	
5	Theory of Derivatives	IOF	3	
6	Money, Banking, and Financial Crisis	DIF	3	
7	Financial Innovations	IOF	3	
8	Computer-aided Financial Modeling	DIF, IOF	3	
9	Special Topics in Real Options and Strategic Investment	IOF	3	
10	Financial Technology and Institutions	DIF, IOF	3	

3. **Committee members:** Han-Hsing Lee, Hsing-Hua Huang, Jia-Hau Guo, Wen-Liang Hsieh, Huimin Chung

4. **Chairperson:** Tian-Shyr Dai

**Unit:** Graduate program of Finance, Department of Information Management and Finance

\*The Regulations were drawn up in Chinese and translated into English. In the event of any discrepancy between the two versions, the original Chinese version shall prevail.