國立中正大學課程大綱

National Chung Cheng University Syllabus

課號 course code		全英文授課 EMI	□是 □■否
課程名稱（中文） course name（Chinese）	金融科技		
課程名稱（英文） course name（English）	Financial Technology		
學年 academic Year /semester	114-1 學期 Autumn semester 2025	上課地點 classroom	TBA
學系（所） department	Graduate Institute of Business Administration	必選修 required/selected	□required ■selected
教師 instructor	宋豪漳 Hao-Chang Sung E-mail: hcsung@ccu.edu.tw	學分 credit	3
助教 teaching assistant	TBA	助教 email TA email	
先修科目或先備能力 prerequisites	Financial Management, The Fundamentals of Statistics		
課程概述 course descriptions	§The financial industry was, until recently, a very concentrated sector. However, this is becoming less and less true as a wave of innovations dramatically lowers the barriers to entry and intensifies the degree of competition among providers of financial services. Disruptive technologies are being implemented increasingly, leading to significant changes in payments, lending, borrowing, insurance, wealth management, and venture capital. To understand this revolution, one needs to have a good grasp of technological innovations and the economics of the financial sector. The course will introduce the basic knowledge of FinTech and the use and the trend of FinTech in Taiwanese industry compared to worldwide. These include: 1. the fundamentals of FinTech; 2. The Business Models and Innovation Strategies in FinTech; 3. Digital Transformation of Financial Payment Technology and Insurance		

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	Technology; 4. Deposit and Loan Market Status and Operating Trends; 5. Fundraising and investment management automation; 6. Supervisory Technology Applications.

學習目標 learning objectives	主要學習目標 Major learning goal 目標 1：創新思考 LG1:Creative Thinking	主要學習目標 Major learning goal 目標 4：全球視野 LG4:Global Perspectives	次要學習目標 Minor learning goal 目標 2：溝通能力 LG2:Communication Skills

教科書及參考書 textbooks and reference

Textbooks:

1. "**Basic Knowledge of FinTech**," Taiwan Academy of Banking and Finance(TABF) publisher, 2020. https://ifinbook.tabf.org.tw/File/EBook/419102/E0065/

References:

1. 李顯儀， 數位金融與金融科技(第三版), 2021, 全華圖書。
2. Hull, J. Machine Learning in Business: An Introduction to the World of Data Science. Amazon Distribution. 2020. (*much easily one).
3. Case study:
   i. Suspicion of Money Laundering at Mega Bank: A Money Laundering Prevention Course
      Worth NT$5.7 Billion
      (兆豐銀行洗錢疑雲：一門代價台幣57億元的洗錢防制課)
   ii. Taishin Bank Financial Specialist Steals Client Funds
      (台新銀行理財專員盜領客戶資金事件)
   iii. Blockchain applications and risks
      (區塊鏈的應用與風險)
4. Kelly, Bryan T. and Xiu, Dacheng, Financial Machine Learning (July 1, 2023). Available at SSRN: https://ssrn.com/abstract=4501707 or http://dx.doi.org/10.2139/ssrn.4501707

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教學要點概述	
教材編選 teaching materials	■自編教材 ■教科書作者提供 □其它
教學方法 teaching method	■講述 ■小組討論 □演式法 □問題導向學習 ■個案研究 □網路教學 □實驗法 □其它

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評量方法 evaluation	■上課點名 20% □小考 0% ■作 業 15% □程式實作 0% □實習報告 0% □專案 0% ■期中考 25% □期 末 考 0% ■期末報告 40% □其它 0%
教學資源 teaching resources	□課程網站 ■教材電子檔供下載 □實習網站
與 SDGs 目標的關聯 related to objectives of SDGs	□SDG 1 終結貧窮 □SDG 2 消除飢餓 □SDG 3 健康與福祉 ■SDG 4 優質教育 □SDG 5 性別平權 □SDG 6 淨水及衛生 □SDG 7 可負擔的潔淨能源 □SDG 8 合適的工作及經濟成長 □SDG 9 工業化、創新及基礎建設 □SDG 10 減少不平等 □SDG 11 永續城鄉 □SDG 12 責任消費及生產 □SDG 13 氣候行動 □SDG 14 保育海洋生態 □SDG 15 保育陸域生態 □SDG 16 和平、正義及健全制度 □SDG 17 多元夥伴關係
教師 相關訊息 instructor' s information	宋豪漳 Hao-Chang Sung E-mail: hsung@ccu.edu.tw

每週課程內容
weekly scheduled contents

Week 1 (09.10)： a. Course Overview
b. Topc 1: the fundamentals of FinTech (I)

Week 2 (09.17)： Topic 1: The fundamentals of FinTech (II)

Week 3 (09.24): Topic 2: The Business Models and Innovation Strategies in FinTech:
a. Case study:
Suspicion of Money Laundering at Mega Bank: A Money Laundering Prevention Course Worth NT$5.7 Billion (兆豐銀行洗錢疑雲：一門代價台幣 57 億元的洗錢防制課)
b. Cloud Computing and Big Data Analytics

Week 4 (10.01): Self-study (No class)

Week 5 (10.08)： Topic 2 The Business Models and Innovation Strategies in FinTech:
c. The basic concepts of Artificial Intelligence

Week 6 (10.15): Topic 2: The Business Models and Innovation Strategies in FinTech:
d. Basic concepts and applications of machine learning (e.g., age and salary)
e. Characteristics of machine learning and difficulties in applying it to the financial (stock) market.

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Week 7 (10.22): **Case Study:** i. Taishin Bank Financial Specialist Steals Client Funds (台新銀行理財專員盜領客戶資金事件) ii. Topic 3: Digital Transformation of Financial Payment Technology and Insurance Technology (I)
Week 8 (10.29): Topic 3: Digital Transformation of Financial Payment Technology and Insurance Technology (II) i. Supplement: The use of machine learning in financial markets
Week 9 (11.05)： Topic 4: Deposit and Loan Market Status and Operating Trends (I)
Week 10 (11.12)： Topic 4: Deposit and Loan Market Status and Operating Trends (II)
Week 11 (11.19)： Midterm-Exam (open-book)
Week 12 (11.26)： Topic 5: Fundraising and investment management automation (I)
Week 13 (12.03)： Topic 5: Fundraising and investment management automation (II)
Week 14 (12.10)： Topic 6: Supervisory Technology
Week 15 (12.17)： **Final term: Project (Oral) Presentation (I)**
Week 16 (12.24)： **Final term: Project (Oral) Presentation (II)**
Week 17 (12.31): Holiday: New Year's Day (No class)
Week 18 (01.07)： Self-studying
核心能力 **core competencies**
1. The course will be offered for graduate students and undergraduates (junior and senior). 2. Teaching Approach(es): i. Lecture: 50% ii. Class Discussion: 20% iii. Group Activity: 30% 3. Course Assessment: i. **Class Participation/Attendance (20%)** Class attendance and participation are essential. Students need to send an e-mail in advance to explain their absences. (In case of an emergency or illness, they can send me an e-mail after their absence.) ii. **Homework Assignments (15%)** There are 2-3 homeworks. Students are required to hand it in before the deadline. iii. **Open-book Midterm Exam (25%)** There will be one midterm exam for this course. The exam will consist of 2 to 3 essay questions and 3 to 5 problems with the help of a PC. Each exam grading is based on a 100-point basis. iv. **Final-term Project (40%) (Week 17, 18)**

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a. **Students need to do a final data project (in terms of finance fields of topic) designed to engage in data analysis using Machine learning or deep learning via Python.** Before this semester's end, each group must hand in both Work-version and PPT-version files about their final project.

b. **Students will form a team (2-3 students)** and present the final projects in the last two weeks. Each group must analyze a chosen topic and present the findings.

c. Using Python, each group will need to acquire and clean the data and use tools from the course to explore, describe, and analyze the data.

d. To polish your projects' findings, each group should evaluate the projects' findings by making predictions (via both in-sample and out-of-sample tests via machine learning or deep learning methods).

e. Each group should be confident in their knowledge of the course material by engaging in the final project.

f. When presenting, imagine that you are a stock analyst or salesperson; how can you use a simple and naive way to make the audience understand the content of your presentation?

g. Later, it may not be easy to understand or explain related concepts when introducing technical or theoretical concepts. Then you have to think: If the presenter is difficult to digest and understand the contents, how can you make it easy for the audience to understand? It is a better way to illustrate and clearly explain mathematical symbols or expressions with drawings and figures.

h. Audiences that raise intuitive questions will gain a bonus.

The lecturer may provide some complements for the presentation.

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