

IS4228 Information Technology and Financial Services

AY 2023/24 Semester 1

How do financial markets work? What roles does information play in the financial markets? How information technologies work in this context? This module first goes through the fundamentals of finance, understanding which leads to some classical wisdom on the relationship between information and financial markets. After that, this module will go over some state-of-the-art information technologies that realizes such classical wisdom. Through understanding the wisdom and reality, students are expected to think about the future of information technologies in finance.

Venue: LT19

Day and time: Tuesday, 6:30 pm – 9:30 pm

Instructor: Xiaofan Li

Teaching assistant: TBD

Textbook (recommended): Corporate finance: the core by Jonathan B. Berk and Peter DeMarzo (BD hereafter)

Grading

- Individual assignments (5 * 5% = 25%)
- Class participation (5%)
- Mid-term test (35%)
- Group project (35%)

Tentative weekly syllabus (*subjected to changes*)

Week	Topic	Case	Submission
	Part I: Fundamentals of corporate finance		
1	<ul style="list-style-type: none"> ➤ Module overview (expectation and assessment) ➤ Introduction to Fintech 	<ul style="list-style-type: none"> ➤ Banks and challenges from nonbanks 	
2	<ul style="list-style-type: none"> ➤ The law of one price ➤ The time value of money ➤ Investment decision rules <p>References</p> <ul style="list-style-type: none"> ➤ BD – Chapters 4-6 		
3	<ul style="list-style-type: none"> ➤ Valuing bonds <p>References</p> <ul style="list-style-type: none"> ➤ BD – Chapters 7-8 		Assignment 1
4	<ul style="list-style-type: none"> ➤ Valuing stocks <p>References</p> <ul style="list-style-type: none"> ➤ BD – Chapter 9 	<ul style="list-style-type: none"> ➤ Broker-dealer apps, e.g., Robinhood 	Assignment 2

5	<ul style="list-style-type: none"> ➤ Risk and return ➤ Optimal portfolio choice <p>References</p> <ul style="list-style-type: none"> ➤ BD – Chapters 10-11 	<ul style="list-style-type: none"> ➤ Modern portfolio theory 	Assignment 3
6	<ul style="list-style-type: none"> ➤ The capital asset pricing model (CAPM) <p>References</p> <ul style="list-style-type: none"> ➤ BD – Chapters 12-13 		Assignment 4
Recess week			Assignment 5
7	Mid-term test		
Part II: Fintech use cases			
8	<ul style="list-style-type: none"> ➤ Information in financial markets ➤ Social media in financial markets ➤ The GameStop story ➤ Group project ideation 		
9	<ul style="list-style-type: none"> ➤ No lecture! ➤ Mandatory group project consultation 		
10	<ul style="list-style-type: none"> ➤ Payments: SWIFT, PayNow, Ripple, and cryptocurrencies ➤ IT outsourcing by financial institutions. 		
11	<ul style="list-style-type: none"> ➤ Automated market makers ➤ Applied learning: simulated trading using NUS Fintech Lab 		
12	<ul style="list-style-type: none"> ➤ Group project presentation 		
13	<ul style="list-style-type: none"> ➤ Group project presentation 		