FIN520
Financial Economics I
Module 3, 2024-2025

Course Information

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Office Hour: 10.00-12:00 on Mondays, 10:00-17:00 on Thursdays, or by appointment. Please send an email appointment in advance.

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Classes:
Lectures: Mondays and Thursdays, 13:30-15:20
Venue: PHBS Building, Room TBD

1. Course Description

1.1 Context

Course overview:

The objective of this sequential two-module course of **Financial Economics I and II** is to provide a rigorous study of the theoretical foundations of modern financial economics. These two consecutive courses are designed to follow an integrated logical flow and sequence to lead students to study foundations of modern financial economics, the classical asset pricing approach, as well as advanced general equilibrium asset pricing models in both the static and dynamic settings.

Financial Economics I can be considered as a course on "Foundations for Financial Economics". The course will cover the central themes of modern finance including individual investment decisions under uncertainty, stochastic dominance, mean-variance theory, capital market equilibrium and asset valuation, arbitrage pricing theory, and general equilibrium asset pricing model in a static setting (i.e. a two-period model), and the potential applications of these themes.

As a preview for the next course **Financial Economics II**, it is a continuation of Part I, and can be considered as a course on "Advanced Asset Pricing Theory". It extends the asset pricing theories from a static setting, which is acquired in Financial Economics I, into a dynamic multiple-period setting, and extensively cover dynamic asset pricing models, with their cutting-edging applications in the frontier asset pricing research.

Target Audience for Financial Economics I:

Primary: Junior-year Ph.D. students of Finance or Economics who are interested in developing future dissertation research in finance (either asset pricing or corporate finance). Financial

Economics I is a foundational course which every Ph.D. student in the research field of finance should receive, while Financial Economics II is particularly designed for Ph.D. students in asset pricing or in the conjunction of macroeconomics and finance (i.e. macro finance).
Secondary: Advanced MA students who have the objective to apply to Ph.D. programs in finance and/or economics, and are considering finance as their potential future research field.

Prerequisites for Financial Economics I:

Graduate level microeconomics (for instance, Micheal Parkin, or Pindyck and Rubinfeld, or Hal Varian's Intermediate Microeconomics, or the equivalent textbooks) either already taken or taken concurrently; graduate level calculus, matrix algebra, and statistics. Advanced macroeconomics is not a must, but will be very helpful for this course if already taken or taken in conjunction.

1.2 Textbooks and Reading Materials

We will not follow any particular books closely in this class, but the following textbooks will be useful references. While they are not required, most of them belong on the shelf of every Ph.D. student in finance.

Main reference books:
1. Principles of Financial Economics, Second Edition, Stephen F. Leroy and Jan Werner, Cambridge University Press, 2014. [LW]
2. Huang, Chi-fu and Robert H. Litzenberger, Foundations for Financial Economics, North-Holland, 1988. [HL]
3. Cochrane, John, Asset Pricing, Revised Edition, Princeton University Press, 2005. [C]
4. John Campbell, Financial Decisions and Markets: A Course in Asset Pricing, Princeton University Press, 2018. [CN]

Other reference books:
5. Altug, Sumru and Pamela Labadie, Asset Pricing for Dynamic Economies, Cambridge University Press, 2008. [AL]
6. Ljungqvist, Lars and Thomas J. Sargent, Recursive Macroeconomic Theory, 2nd Edition, MIT Press, 2004. [LS]
7. Back, Kerry, Asset Pricing and Portfolio Theory, Oxford University Press, 2010. [B]
8. Duffie, Darrel, Dynamic Asset Pricing Theory, Princeton University Press, 2001. [D]
9. Pennacchi, George, Theory of Asset Pricing, Pearson, 2008. [P]

Course website: CMS course system

All course materials, including lecture slides, homework assignments, solutions, and references, will be posted there.

2. Learning Outcomes

2.1 Intended Learning Outcomes

Learning Goals	Objectives	Assessment
1. Our graduates will be effective communicators.	1.1. Our students will produce quality business and research-oriented documents.	YES, students will be asked to write a referee report to comment on an existing paper.
	1.2. Students are able to professionally present their ideas and also logically explain and defend their argument.	YES, there will plenty of in-class discussions.

2. Our graduates will be skilled in team work and leadership.	2.1. Students will be able to lead and participate in group for projects, discussion, and presentation.	NO
	2.2. Students will be able to apply leadership theories and related skills.	NO
3. Our graduates will be trained in ethics.	3.1. In a case setting, students will use appropriate techniques to analyze business problems and identify the ethical aspects, provide a solution and defend it.	NO
	3.2. Our students will practice ethics in the duration of the program.	NO
4. Our graduates will have a global perspective.	4.1. Students will have an international exposure.	NO
5. Our graduates will be skilled in problem-solving and critical thinking.	5.1. Our students will have a good understanding of fundamental theories in their fields.	YES, evaluated by exams and homework
	5.2. Our students will be prepared to face problems in various business settings and find solutions.	YES, evaluated by exams and homework
	5.3. Our students will demonstrate competency in critical thinking.	YES, evaluated by exams and homework

2.2 Course specific objectives

Upon completion of this course, students should acquire a clear understanding of the major theoretical results concerning individuals' consumption and portfolio decisions under uncertainty and their implications for the valuations of securities.

2.3 Assessment/Grading Details

Grading:
The course grade will be based on the following components. The relative weights are as follows:

In-class Quizzes: 30%
Assignments: 20%
Final exam: 50%
Class participation: will count for students on the margin between grades.

In Class Quizzes:

We will have two in-class quizzes. We will hold the quizzes for the first 50 minutes of class. Following the quiz, we will have a break for 10 minutes and then resume the lecture. The quizzes are designed to motivate students to closely follow the lectures and spend timely efforts to digest the course materials. Their performance in the quizzes will account for a significant component of the final grade.

Assignments:

There will be periodical assignments. Students are expected to follow the instructions and turn in their assignments in a timely manner.

Class participation:

It includes attendance, class discussions, after-class interactions, and so on. If one student's performance in this category is above/below my expectation, his/her grade will be adjusted upward/downward by one level, for instance, from A to A+ (adjusted upward), or from A to A- (adjusted downward).

2.4 Academic Honesty and Plagiarism

It is important for a student's effort and credit to be recognized through class assessment. Credits earned for a student work due to efforts done by others are clearly unfair. Deliberate dishonesty is considered academic misconducts, which include plagiarism; cheating on assignments or examinations; engaging in unauthorized collaboration on academic work; taking, acquiring, or using test materials without faculty permission; submitting false or incomplete records of academic achievement; acting alone or in cooperation with another to falsify records or to obtain dishonestly grades, honors, awards, or professional endorsement; or altering, forging, or misusing a University academic record; or fabricating or falsifying of data, research procedures, or data analysis.

All assessments are subject to academic misconduct check. Misconduct check may include reproducing the assessment, providing a copy to another member of faculty, and/or communicate a copy of this assignment to the PHBS Discipline Committee. A suspected plagiarized document/assignment submitted to a plagiarism checking service may be kept in its database for future reference purpose.

Where violation is suspected, penalties will be implemented. The penalties for academic misconduct may include: deduction of honour points, a mark of zero on the assessment, a fail grade for the whole course, and reference of the matter to the Peking University Registrar.

AI tools requirements：
Using AI tools to complete assignments or assessments without the approval of the course instructor and without authorization will be regarded as an act of academic dishonesty. Depending on the severity of the situation, penalties will be implemented in accordance with the provisions of the Peking University Graduate Student Handbook.

For more information of plagiarism, please refer to *PHBS Student Handbook*.

3. Topics, Teaching and Assessment Schedule

Course outline is subject to minor changes along the progress of the course.

Topic 1: Introduction to Financial Economics: Questions and Methodologies

Topic 2: Decision under Uncertainty

- Expected utility representations
- Risk aversion
- Insurance premium
- Portfolio choice and risk aversion
- Important utility functions
- Stochastic dominance
- **Application**: Optimal portfolio choice problem

Topic 3: State Prices, Arbitrage and Stochastic Discount Factors (SDF)

- Law of one price and no arbitrage
- Fundamental Theorem of asset pricing
- State prices and risk neutral probability
- Restrictions/boundaries on the SDF
- **Application**: International asset pricing puzzles

Topic 4: Mean-Variance Portfolio Analysis

- Notation and definitions
- Characterization of minimum variance portfolios
- Properties of minimum variance portfolios
- An orthogonal characterization of the mean-variance frontier
- **Application**: ESG efficient frontier

Topic 5: The Capital Asset Pricing Model (CAPM)

- Statement of CAPM
- Derivation of CAPM
- One and two-fund separation
- Relation between SDF, beta representations, and mean-variance frontiers
- Tests of CAPM and the cross-section of expected returns
- **Application:** Extended CAPM for social responsible investment

Topic 6: Arbitrage Pricing Theory and Linear Factor Models

- Linear factor model
- An economy with multiple factors and no residual risk
- An economy with multiple factors and residual risk
- Conditional versus unconditional models
- **Application:** Jagannathan and Wang (1996, JF)

Topic 7: Equilibrium Asset Pricing in a Two-Period Model Setting

- Complete contingent claims equilibrium, Pareto optimality and risk sharing
- Security-spot equilibrium
- Aggregation and representative agent equilibrium
- Incomplete markets: some basic concepts
- **Application:** Representative agent asset pricing model

Topic 8 (Special Topic): Equilibrium Asset Pricing Model with Financial Market Frictions in a Two-Period Model Setting

- Frictionless production-based asset pricing model
- Asset pricing models with financial market frictions

4. Miscellaneous