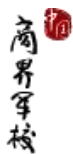




# PHBS

北京大学汇丰商学院



## FIN 541 Market Microstructure Module 2, 2022-2023

### Course Information

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Office Hour: Thursday 11:00-13:00 (or by appointment via email)

**Teaching Assistant: TBA**

**Classes:** Mon & Thu 15:30-17:20 @ PHBS Building, Room TBA

**Course Website:** TBA

### 1. Course Description

**Course Overview:** This course combines theoretical modelling, institutional settings, and empirical analysis to understand how securities are traded in financial markets. There are three main parts of the course. The first part introduces modern financial markets and key players, institutions, and regulations. In the second part, we will go over basic theoretical models of market microstructure to pave the way for the third part. In the last part, we will examine informational efficiency and aggregation in financial markets.

**Prerequisites:** The course has no formal prerequisites. However, I assume familiarity with basic Microeconomics (e.g., optimization problems). It is essential to follow the 2<sup>nd</sup> part of the course and better understand the third part.

### 2. Textbooks and Reading Materials

There is no assigned textbook for the class. However, the main reference book for the 1<sup>st</sup> and 3<sup>rd</sup> part is:

Hasbrouck, J. (2021). Securities Trading: Principles and Procedures. Manuscript, version, 12c.

<https://pages.stern.nyu.edu/~jhasbrou/STPP/drafts/STPPms12c.pdf>

We will closely follow Hasbrouck (2021) in the first and third part. There will also be some required readings in the third part. For the second part, you can choose to read the original articles or use a book on market microstructure to study those models. Here is an incomplete list of reference books that you may find helpful for following the 2<sup>nd</sup> part (and for other parts):

1. De Jong, F., & Rindi, B. (2009). *The microstructure of financial markets*. Cambridge University Press.
2. Hasbrouck, J. (2007). *Empirical market microstructure: The institutions, economics, and econometrics of securities trading*. Oxford University Press.

I'll also post class handouts as we go along. Other readings will be indicated in the handouts.

### 3. Assessment/Grading Details

You will have one midterm and one final exam. You will have an in-class midterm in the 5<sup>th</sup> or 6<sup>th</sup> week. The exact midterm date will be announced in the second week of the module. The final exam is scheduled on **Jan 3, 2023, at 16:00 – 18:00**. In addition to these exams, there will also be a trading exercise.

**Midterm:** %35  
**Final Exam:** %40  
**Trading Exercise:** %25

[TD Bank Virtual Stock Market Game Rules](#): Students practice trading stocks with real prices. Each student receives an amount of virtual dollars in a virtual brokerage account and simulates managing a portfolio by buying and selling stocks at real-time prices. This trading exercise has two parts. In the first part, you will be asked to trade stocks using a pre-specified method. If you apply the methods correctly, you get full credit from this part regardless of your portfolio performance. In the second part, you are free to use any method you want. Your grade from this part depends on your portfolio performance. I will share more details about the breakdown of points when we start trading exercise.

### Academic Honesty and Plagiarism

A student's effort and credit need to be recognized through class assessment. Credits earned for a student's work due to efforts done by others are unfair. Deliberate dishonesty is considered academic misconduct, which includes 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 grades, honors, awards, or professional endorsement dishonestly; 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 checks. Misconduct checks may include reproducing the assessment, providing a copy to another faculty member, and/or communicating 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 purposes. Where a violation is suspected, penalties will be implemented. The penalties for academic misconduct may include a deduction of honor points, a mark of zero on the assessment, a fail grade for the whole course, and a reference of the matter to the Peking University Registrar. For more information on plagiarism, please refer to [PHBS Student Handbook](#).

### 4. Diversity and Inclusion

We must treat every individual with respect and share a commitment to diversity and equity. Diversity is fundamental to building and maintaining an equitable and inclusive campus environment. In this course, we respect and embrace the unique experiences that brought each person here, including but not limited to race, color, national origin, language, sex, disability, age, sexual orientation, gender identity, religion, background, learning styles, ways of expression, or academic interests. We acknowledge our imperfections while we also fully commit to the work, inside and outside of our classrooms, of removing barriers to education so that everyone may participate fully in the community. I encourage anyone who experiences or observes unfair or hostile treatment based on identity to speak out for justice and support, within the moment of the incident or after the incident has passed.

## **5. Tentative Topics and Schedule**

### **Part I: Modern Securities Markets (Week 1 - 5)**

- 1.1.** Introduction
- 1.2.** Elements of Securities Markets
- 1.3.** Floor and Limit Order Markets
- 1.4.** Auctions, Dealers, and Dark Trading Mechanisms
- 1.5.** The Basics of Algorithmic and High Frequency Trading (time permitting)

### **Part II: Information-Based Microstructure Models (Week 6 – 7)**

- 2.1.** Kyle's Model
- 2.2.** Glosten-Milgrom Model
- 2.3.** The CARA-Normal Framework

### **Part III: Information and Efficiency (Week 8 – 9)**

- 3.1.** Efficient Market Hypothesis
- 3.2.** Price Discovery and Price Informativeness

**Note 1:** The topics and schedules are subject to further revisions along the progress of the course. The midterm exam will cover 1.1. to 1.5. The final exam will be cumulative and cover all topics.

**Note 2:** If the class-size is small-enough, I will replace the in-class midterm with a short research proposal/project.

**Note 3:** Classes on Dec 19 will be moved to Dec 21.