Research Methodology (QF)
Module 1, 2022-2023

Course Information

Instructor: Jaehyuk Choi and Xianhua Peng

Office: PHBS Building, Room 755 (Prof. Choi) and Room 756 (Prof. Peng)

Phone: 86-755-2603-0568 (Prof. Choi) and 86-755-2603-3050 (Prof. Peng)

Email: jaehyuk@phbs.pku.edu.cn, xianhuapeng@phbs.pku.edu.cn,

Office Hour: TBA

Teaching Assistant: *TBA*

Classes:

Lectures: Monday, 10:30am-12:20pm

Venue: PHBS Building, Room TBA

Course Website:

https://github.com/PHBS/RM-QF

1. Course Description

1.1 Context

Course overview:

The course covers research methodology and research topics in the field of Quantitative Finance and Finance Technology. The purpose of the course is to prepare students to write a master's thesis on topics in Quantitative Finance and Financial Technology. The covered topics include the introduction to academic research, the methods of searching for academic papers, the methods of literature review, the use of the Zotero for reference management, introduction to research topics in Quantitative Finance and Financial Technology, discussion of top-tier academic papers in the field of factor investing, stock option pricing, portfolio selection, algorithmic trading, machine learning in finance, digital currency, block chain, etc. Throughout this course, students will learn what is good research by examples. Then, students will choose their own thesis topics and present a literature review and research proposal in class.

Prerequisites: N/A

1.2 Textbooks and Reading Materials

There is no textbook for the course. The course slides and published research papers will be available at the course website.

2. Learning Outcomes

2.1 Intended Learning Outcomes

Learning Goals	Objectives	Assessment (YES with details or

		NO)
1. Our graduates will be effective communicators.	1.1. Our students will produce quality business and research-oriented documents.	Yes. The students will write a research proposal including literature review on a self-chosen topic in Quantitative Finance and Financial Technology.
	1.2. Students are able to professionally present their ideas and also logically explain and defend their argument.	Yes. The students will individually present a research proposal on a self-chosen topic.
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.	Yes. The students will participate in group discussion of academic papers.
	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.	Yes. The students will learn how to provide scientific evidence that one investment strategy is better than another one.
	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.	Yes. The students will study top-tier academic papers by internationally renowned researchers.
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. The students will have a good knowledge on how to do research in Quantitative Finance and Financial Technology.
	5.2. Our students will be prepared to face problems in various business settings and find solutions.	Yes. The students will learn how to use advanced mathematics to formulate and solve problems in Quantitative Finance and Financial Technology.
	5.3. Our students will demonstrate competency in critical thinking.	Yes. The students will learn how to read an academic

		paper critically and think creatively.

2.2 Course specific objectives

After taking the course, the students will choose a specific topic in Quantitative Finance and Financial Technology and write a research proposal including a literature review for his or her master's thesis.

2.3 Assessment/Grading Details

The students need to do an individual presentation on the literature review and research proposal of a self-chose topic in Quantitative Finance and Financial Technology. The students also need to submit written research proposals. There will also be a closed-book and closed-notes final exam on academic writing. The grade of the course is given by attendance (10%), presentation and proposal (60%), and final exam (30%).

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.

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

3. Topics, Teaching and Assessment Schedule

Final exam will be held on November 12 or 13, 2022.

4. Miscellaneous