



北京理工大学国际特色课程

Beijing Institute of Technology Global Courses

## **ECON9470 - ADVANCED FINANCIAL ECONOMICS**

### *Syllabus*

**July. 1 - July. 19, 2024**

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Term Duration: July. 1 - July. 19, 2024

Credit Points: 4

Level: Postgraduate

Instructor Name: TBA

Home Institution: Beijing Institute of Technology

Lecture Hour: 12:30-15:30

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### ***Course Description***

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This comprehensive course in Financial Economics provides students with a deep understanding of the core principles and mechanisms that govern financial markets. It begins with a foundational understanding of financial economics and the institutions that shape market dynamics. Students will delve into asset economy analysis and the critical role of risk in investment decisions. Through an exploration of both static and dynamic finance economies, the course offers insight into the ever-evolving financial landscape. Empirical challenges and theoretical puzzles are addressed, preparing students for practical problem-solving in financial contexts. The curriculum further encompasses decision-making under uncertainty, utilizing the Expected Utility Hypothesis as a guide. Fundamental mathematical concepts such as exponents and logarithms are integrated to support financial theory. The course also provides an in-depth study of portfolio selection through the mean-variance model and explores the Capital Asset Pricing Model's applications. Advanced topics including arbitrage, factor models, and pricing theories extend students' analytical

capabilities. Finally, the course covers the critical techniques of constrained and unconstrained optimization and delves into the complex world of derivatives, including options and futures.

### ***Course Aims:***

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Upon successful completion of this course, students should be able to:

1. analyze financial markets and institutions using fundamental economic principles and mathematical techniques;
2. evaluate assets and make informed decisions under conditions of uncertainty and risk;
3. distinguish between static and dynamic models of finance and apply these concepts to real-world economic scenarios;
4. critically assess empirical evidence and apply theoretical models to resolve financial puzzles;
5. apply the Expected Utility Hypothesis to individual and market decisions;
6. construct and optimize investment portfolios using the mean-variance model and understand the implications of the Capital Asset Pricing Model;
7. understand and apply various optimization techniques and assess financial derivatives to make strategic investment and hedging decisions.

### ***Language of Instruction***

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English

### ***Required Textbook***

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#### ***Mathematics for Economists***

**Author:** Carl P. Simon, Lawrence E. Blume

**Publisher:** W. W. Norton & Company

**ISBN:** 9780393957334

#### ***The Economics of Financial Markets***

**Author:** Roy E. Bailey

**Publisher:** Cambridge University Press

**ISBN:** 9780521612807

***Microfoundations of Financial Economics: An Introduction to General Equilibrium Asset Pricing***

**Author:** Yvan Lengwiler

**Publisher:** Princeton University Press

**ISBN:** 9780691126319

Other materials provided by the course lecturer.

***Course Hours***

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This course requires 48 hours of contact including 42 hours of lectures and one 6-hour field trip. Lectures are from Monday to Friday.

***Prerequisite Course***

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Students are expected to have taken **Advanced Microeconomics** or to possess a thorough knowledge of the topics covered in the mentioned course.

***Course Schedule***

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Week	Day	Lecture	Topic	Assignment/ Notes
Week 1	Day 1	Lecture 1	Financial Economics; Financial Markets and Institutions	Recommended Reading Materials Provided in Class
	Day 2	Lecture 2	Asset Economy; Risky Decisions	Yvan Lengwiler (Chap 2-3)
	Day 3	Lecture 3	Static Finance Economy; Dynamic Finance Economy	Yvan Lengwiler (Chap 5-6)
	Day 4	Lecture 4	Empirics and the Puzzles	Yvan Lengwiler (Chap 7)
	Day 5	Lecture 5	Decision Making Under Uncertainty: The Expected Utility Hypothesis	Roy E. Bailey (Chap 4)
Week 2	Day 6	Lecture 6	Exponents and Logarithms	Carl P. Simon (Chap 5)
	Day 7	Lecture 7	Portfolio Selection: The Mean- Variance Model	Roy E. Bailey (Chap 5)

	Day 8	Lecture 8	The Capital Asset Pricing Model	Roy E. Bailey (Chap 6)
	Day 9	Lecture 9	Arbitrage; Factor Models and The Arbitrage Pricing Theory	Roy E. Bailey (Chap 7-8)
	Day 10	Industrial Visit		
Week 3	Day 11	Lecture 10	Constrained Optimization	Carl P. Simon (Chap 18, 19)
	Day 12	Lecture 11	Unconstrained Optimization	Carl P. Simon (Chap 17)
	Day 13	Lecture 12	Options, Futures, and Other Derivatives in Financial Markets	Recommended Reading Materials Provided in Class
	Day 14	Guided Revision		
	Day 15	Final Exam		

**Note:** Students will be notified if the schedule of the field trip changes according to the situation.

### *Grading Policy*

Method	Percentage
Participation	10%
Quizzes	10%
Mid-Semester Test	30%
Final Exam	50%
Total	100%

**Participation:** Students are expected to attend all course sessions punctually. Absences will impact the attendance grade. We will have some case studies and group discussion in class and the performance will be considered as partial attendance points or bonus.

**Quizzes:** Short-answer quizzes, lasting 50 minutes, will be administered during class to assess understanding of recent topics.

**Mid-Semester Test:** The test will span a duration of 2 hours and will assess students on the material covered in the first half of the course. Students are expected to demonstrate their knowledge and analytical skills through this examination.

**Final Exam:** The final exam will be a comprehensive assessment encompassing all course content. This exam will have a duration of 3 hours, and students will be evaluated on their understanding and application of the material covered throughout the course.

### ***Academic Honesty***

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Academic honesty is not only a fundamental part of learning and teaching, but also a core value that this course embraces. Behaviors of academic dishonesty, as outlined hereinafter, are unacceptable and will be penalized:

- a) Plagiarism where students present work for assessment, publication or otherwise that is not their own, without appropriate attribution or reference to the original source. Plagiarism can include:
  - i) paraphrasing or copying published and unpublished work without a reference;
  - ii) adopting the ideas or concepts of others, including the structure of an existing analysis without due acknowledgement by way of reference to the original work or source.
- b) Collusion, where students present work as independent work when it has in fact been produced in whole or in part with others unless prior permission for joint or collaborative work has been given by the Course Coordinator. Collusion can include:
  - i) a student inappropriately assisting with or accepting assistance with the production of an assessment task;
  - ii) submitting work which is the same or substantially similar as another student's work for the same assessment task.
- c) Cheating, where a student acts in such a way as to seek to gain unfair advantage or assist another student to do so. Cheating can include:
  - i) submitting falsified, copied or improperly obtained data relating to results of practicum, field trips or other work as if they were genuine; submitting an assessment task with the intention of deceiving or misleading the instructor about the student's contribution to the work;
  - ii) submitting an assessment task written or answered for the student by another person or which the student has copied from another person;
  - iii) submitting the same or a substantially similar piece of work for assessment in two different courses (except in accordance with approved study and assessment schemes);
  - iv) a student falsely indicating that they have been present at an activity where attendance is required;
  - v) completing an assessment task outside the conditions specified for that task.
- d) Cheating in Examinations means engaging in dishonest practice or breaching the rules regarding examinations, which can include:
  - i) communicating in any way during an examination with any person who is not an examination supervisor inside or outside the examination venue;
  - ii) giving or accepting assistance from any person who is not an examination supervisor whilst in the examination venue;
  - iii) reading, copying from or otherwise using another student's work in an examination or knowingly allowing a student to do so;
  - iv) possessing, referring to or having access to any material or device containing information directly or indirectly related to the subject matter under examination, other than that explicitly approved by the Course Coordinator;
  - v) acquiring, or attempting to acquire, possess or distribute examination materials or information without approval;

- vi) permitting another person to attend an examination on a student's behalf or attending an examination on behalf of another student;
- e) Other dishonest acts including but not limited to:
  - i) altering or falsifying any document or record for the purposes of gaining academic advantage;
  - ii) offering or giving money or any item or service to a University staff member or any other person to gain academic advantage for the student or another person;
  - iii) inventing references.