Financial Economics

Course Basic Information:

Instructor: Lei (Jack) Sun
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Course Time: Pending
Location: Pending
Office Hours: Pending

Course Objectives:

This course is tailored for master students with economics/finance background. The goal of this course is to provide students with an understanding of the fundamental and central theories and techniques of financial economics at the Master's level. After successful completion of the course students should:

1. Have a complete understanding of the fundamentals of financial economics: utility theory, mean-variance portfolio analysis, Capital Asset Pricing Model and other linear factor models, no arbitrage and state pricing.
2. Understand how to extend these fundamental models to multi-period cases.
3. Have a basic understanding of derivative pricing.

Course Material:

Recommended textbooks include:
1: *Theory of Asset Pricing*, by George Pennacchi, 2007, Princeton University Press, Pearson.
2: *Foundations for Financial Economics*, by Huang, C. & Litzenberger, R., 1988, Elsevier Science.
3: *Principles of Financial Economics,* by Stephen F. Leroy & Jan Werner, 2001, Cambridge University Press.

Recommended papers will be mentioned in lecture notes. Lecture notes will be photocopied and brought to you before class.

Course Contents:

Prerequisite---Mathematics (GEN 500)

1: **Expected Utility and Risk Aversion**: St. Petersburg Paradox, Utility Function, Jensen's Inequality, Risk Premium, and Absolute/Relative Risk Aversion. (Lectures 1-3)

2: **Mean Variance Analysis**: Efficient Frontier, Two/N Assets Examples, Portfolio Separation, Zero-Covariance Portfolio, and the Case with Riskless Asset. (Lectures 4-6)

3: **Linear Factor Models**: CAPM, Arbitrage, APT, Asymptotic Arbitrage, and Fama and French 3-Factor Model. (Lectures 7-8)

4: **Consumption-Saving Decision, Stochastic Discount Factor and State Pricing**: EIS, Stochastic Discount Factor, Equity Premium Puzzle, Arrow-Debreu Securities, Fundamental Theorem of Asset Pricing, Risk Neutral Probabilities, and Complete Markets. (Lectures 10-12)

5: **A Multiperiod Discrete-Time Model of Consumption and Portfolio Choice**: the Bellman Equation, Multiperiod Market Equilibrium, the Lucas Model of Asset Pricing, and Bubbles. (Lectures 13-15)

6: **Derivatives**: Forward Contracts, European/American Options, Put-Call Parity, Option Bounds, Binomial Tree Method, and Early Exercise Provision. (Lectures 16-18)

7: **Related topics about China**

Grading:

Midterm Exam: 30%
It will be held at the first lecture in week 5 (the 9th lecture in all), lasting for 90 minutes. The scope of the exam includes all the material taught by the end of week 4. It is a closed-book, closed-notes exam. You are allowed to bring your calculator with you.

Final Exam: 70%
It will be held at the end of this module, lasting for 2 hours. It covers all the academic contents in this course (60%), plus 10% practical financial knowledge. A typical question in practical financial knowledge part will look like:
-*What's the full name of 'ST' in Chinese stock market?*
Still, it is a closed-book, and closed-notes exam. You are allowed to bring your calculator with you.

If you anticipate any conflicts with the exam dates, please inform me as early as possible **before the exam**. I do not accept travel plans, job/internship interviews as a legitimate reason. For other conflicts with sufficient evidence, we can discuss them case by case. A general solution is a make-up exam.

The overall mark will be aligned with other courses, specifically a similar mean but normally a high standard deviation. (Pay attention to the tail risk)

Plagiarism Issues

The penalties for any form of cheating or plagiarism are severe and will lead to your failure in this course.

Other Issues

1: Contacts: Please register your **correct** email when enrolling for this course as this is the main channel we contact each other throughout this course. Please check your email **daily** when it is possible. Treat these requirements as your own responsibility.

2: Discipline: I do not require attendance. But I strong encourage your appearance in class. If you decide to come, show your respect to both the instructor and your peers. Make sure to come to class **on time** and not leave early. Switch off your mobile or at least keep it **quiet** during class.