

Finance Theory

Course Syllabus, Spring 2008

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This required course introduces the major contributions made by financial economists in *asset trading, corporate finance, and banking* to the first-year graduate students with finance major. Finance is a subfield of economics, with its focus on one input market—the capital market. Just like in other input markets, households and firms respectively constitute the major suppliers and demanders of the input (funds). Unlike in other input markets, suppliers do not receive the payments from the demanders at the time funds are supplied; instead, they receive “financial assets,” which specify how payments by the demanders will be made in the future. Inevitably, finance must deal with the interactions of “time, money, and uncertainty.” Financial economists study the behavior of households (investments), the behavior of firms (financial management), the functioning of markets (financial institutions), and how trades are consummated (asset pricing) under various trading mechanisms (market microstructure). This course intends to go over some important issues in these areas.

The course is divided into 3 parts. Part I considers the theory of asset trading, starting with the classic theory with perfect and competitive financial markets, and then moving on to the case with market imperfections and differential information. Part II considers asset trading with strategic investors, and since this literature commonly takes a game-theoretic approach, a brief review of the non-cooperative game theory will be given. Finally, Part III will survey several important theories in corporate finance and banking, where the game-theoretic approach is again proven most useful.

Lecture notes will be passed out constantly. There will be homeworks due weekly. In addition to problem sets solving, there will also be in-class

midterm final exams. The performances in problem sets solving and exams jointly determine the course grade.

The following is a tentative schedule.

Week no.	Contents
1	Math review
2	Expected utility theory
3	Portfolio theory and CAPM
4	Derivative asset pricing
5	Derivative asset pricing (continued)
6	Differential information and REE
7	Static games and Nash-Bayesian equilibrium
8	Dynamic games and perfect Bayesian equilibrium
9	Stock trading with strategic investors
10	Options and futures trading with strategic investors
11	Midterm Exam
12	Financial signaling
13	Finance and product market competition
14	Finance and product market competition (continued)
15	Optimal financial contracts
16	Optimal financial contracts (continued)
17	Microeconomics of banking
18	Final exam