Futures and Options (B40.3335)

Spring 2008

Professor Sabri Öncü

Course Description: This course consists of two parts. The first part of the course deals with the structure of futures markets, pricing of futures contracts and hedging with such contracts. The second part of the course deals with options markets; strategies, pricing and position analysis. The course will consist of lectures, discussions and problem solving.

Prerequisites: All core courses or their equivalents. This course requires a **very** basic knowledge of futures and options.

Problem Sets: Provided by e-mail and distributed in class. The answers will be collected and will be graded on a √+, √, √- and X basis. Solutions to the problem sets will be provided after the due date. Additional problems will be discussed in class.

Exams and Grading: There will be two multiple-choice exams, a midterm and a final. The final grade will be based on the following weights; 30% midterms (15% each), 50% final, 20% class participation. Your performance in the assignments will influence your participation grade. The Stern School recommended grade distribution is: A (20%-25%), B (50%-60%); C (10%-15%); D, F (remainder if any).

Required Material: You are responsible for the material covered in class, for all announcements made in class and for material sent by e-mail. The problem sets and all handouts are part of the class material. The class PowerPoint notes will be forwarded to you by e-mail.

Recommended book: John Hull (H) Options, Futures and Other Derivatives, Prentice Hall, 2005, 6th Edition. The book comes with a **futures/options software CD**. The book is not a substitute for the lecture notes. Some topics and details are not covered by the book.

Other recommended books; Cox and Rubinstein (CR) Options Markets, Prentice Hall, 1985.
Robert McDonald, Derivatives Markets, Addison Wesley, 2003.

Course Outline

Recommended Textbook: John Hull (H): Options, Futures and Other Derivatives, Prentice Hall, 2005, 6th edition.

I. Overview of Derivatives Markets (H: Ch.1)

II. Futures Markets

1. Forward and Futures: Overview/Comparison
2. The Structure of the Futures Markets (H: Ch. 2)
3. The Cost of Carry Model (H: pp. 99-119)
   a) Arbitrage Pricing; **Gold Example**
   b) **FX** forwards , **Stock Index** Futures
4. Hedging with Futures (H: pp. 47-62)

III. Options Markets

1. Options Strategies and Markets (H: Ch. 8,10)
2. Options Valuation
   a) Arbitrage Conditions (H: pp.205-212, 215-220)
   b) Put-Call Parity (H: pp. 212-215)
   c) The Binomial Model (H: pp.241-252)
   d) The Black-Scholes-Merton Model (H: pp.281-291, 293-298)
   e) Sensitivity Analysis (the Greek letters) (H: pp. 341-362)
   e) Volatility; "smiles" and "skews" (H: Ch.16)
3. Options on FX, Indices, Futures (H: pp. 313-322)
4. Risk Management (H: pp. 435-442)
5. Exotic Options (H: Ch.22)