



Futures and Options (C15.0043)

SPRING 2008

Professor Menachem Brenner

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 and discussions.

Prerequisites: All core courses or their equivalents.

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% midterm, 50% final, 20% project. Class participation may improve your grade. The grade distribution is: A (20%-25%), B (50%-60%); C (10%-15%); D,F (remainder). If one gets a higher grade on the final exam, then the midterm will only have a weight of 20% and the final will get 60%. There are no make-up exams for the midterm.

Project: There will be a project where the students will be asked to apply the knowledge and tools that they learned in class. The details will be described in class at the beginning of the term.

Problem Sets: Provided on Blackboard. The answers will not be collected. Solutions to the problem sets will be provided after you had a chance to solve them yourself.

Required Material: You are responsible for the material covered in class, handed out in class and sent to you by e-mail. The problem sets and **all handouts** are part of the class material. The class notes (PowerPoint) will be on Blackboard and should be downloaded.

Required book: John Hull (H) Fundamentals of Futures and Options Markets, Prentice Hall, 2005

Recommended book: Cox and Rubinstein (CR), Options Markets, Prentice Hall, 1985.

Market Tracking: You are expected to follow the markets on a daily basis and be able to answer basic questions regarding 'fair value' for futures contracts and implied volatility from options contracts. Specifically, follow the SPX futures, NDX futures, SPY Options, QQQQ Options. You are also expected to read the daily financial press. Pay attention to futures and options columns.

Class Hours: M-W; 2:00-3:15.

Class Attendance: Students are expected to attend all classes and be on time. No late admittance

Office Hours: Tuesday; 2:00-4:00 and Wednesday 4:00-6:00.

Homepage: www.stern.nyu.edu/~mbrenner

Course Outline

Required Textbook: Hull (H): Fundamentals of Futures and Options Markets. Prentice Hall, 2005.

I. Futures Markets

1. Forward and Futures: Overview (H: pp. 1 – 5)
2. The Structure of the Futures Markets (H: Ch. 2)
 - a) Trading; Clearing and Delivery
 - b) Marking to Market and Margins
3. The Cost of Carry Model
 - a) Arbitrage Pricing (H: pp. 97-105)
 - b) Stock Index Arbitrage and Currency Futures (H: pp. 108-113)
4. Hedging with Futures (H: pp. 47-61)

II. Options Markets

1. Options Strategies and Markets (H: Chs. 8,10)
2. Options Valuation
 - a) Arbitrage Conditions (H: pp. 205-213)
 - b) Put-Call Parity (H: pp.213-216)
 - c) The Binomial Model (H: pp. 243-255)
 - d) The Black-Scholes Model (H: Ch. 12)
 - e) The Greek Letters (H: pp. 317-338)
3. Implied Volatility (H: Ch.17)
4. Value at Risk (H: Ch. 18)