Financial Derivatives (FMBA505)

Fall 2014

Instructor: Hoon Cho

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Office Hours: By appointment

Required Textbook:

Options, Futures, and Other Derivatives by John Hull

Referenced Textbooks:

Derivative Securities by Bob McDonald

Derivative Securities by Robert Jarrow and Stuart Turnbull

Paul Wilmott Introduces Quantitative Finance by Paul Wilmott

2 Teaching assistants: Sang-Wook Sung & Sang-ik Seok (S582)

Focus: foundational concepts, tools, and applications of (financial & real) option pricing theory

Option pricing theory is one of great success stories of the application of scientific methods to business. Option pricing tools have applications across finance in such diverse areas as capital budgeting, investments, speculation, currency hedging, and (of course) pricing and hedging financial options and futures. This course offers an introduction to option pricing concepts, tools, and applications. The main tool we will cover in this course is the binomial model of Cox, Ross, and Rubinstein, and we will also discuss Black-Scholes model. In addition, we will discuss real options, which are non-financial and are not traded.

Prerequisites Introductory finance is the only formal prerequisite. No special knowledge of mathematics beyond high-school algebra is required. However, as in most quantitative courses, students with the strongest math backgrounds will work through most easily. This course places quantitative demands on students typical of our other finance courses.

Organization of the course The course will be in a traditional lecture format, with **a mid-term** and **a final exam**.

Lecture Schedule

Week	Tentative Lecture Schedule
1. Sep. 1 – Sep. 7	Financial Products; Chapter 1
2. Sep. 8 – Sep. 14	No Class - Full Moon Days(Korean Thanksgiving Holidays)
3. Sep 15 – Sep 21	Futures Markets; Chapter 2 – Chapter 3
4. Sep. 22 – Sep. 28	Interest Rates; Chapter 4
5. Sep. 29 – Oct. 05	Forward and Futures Prices; Chapter 5, Interest Rate Futures; Chapter 6, & Swaps; Chapter 7
6. Oct. 6 – Oct. 12	Option Markets; Chapter 9

7. Oct. 13 – Oct. 19	Trading Strategies for Options; Chapter 10 - 11
8. Oct 20 – Oct.26	Binomial Trees; Chapter 12
9. Oct. 27 – Nov. 2	**Mid-term Exam**
10. Nov.3 – Nov. 9	Wiener Process & Ito's lemma; Chapter 13
11. Nov. 10 – Nov. 16	Black-Scholes-Merton Model; Chapter 14
12. Nov. 17 – Nov. 23	Options on Stock Indices, Currencies, and Futures; Chapter 16
13. Nov. 24 – Nov. 30	Greek Letters; Chapter 18 and Volatility Smiles; Chapter 19
14. Dec. 1 – Dec. 7	Exotic Options; Chapter 25
15. Dec. 8 – Dec. 14	Real Options; Chapter 34
16. Dec. 15 – Dec. 21	**Final-Exam**

** The instructor reserves the right to alter this tentative outline if necessary. You will be notified if changes do become necessary.

Course Requirements and Grading

You will be expected to participate in class. There will be 2 Exams worth **300 points** (Mid-term) and **400points** (Final Exam) each. Class Participation and Homework will account for the remaining **300** points.

Mid-term Exam	**300 points**
Final Exam	**400 points**
Homework	**200 points**
Participation	**100 points**
Total	**1000points**