University of California, Los Angeles   Fall 2012
Anderson School of Management

Syllabus

232D Option Markets
Sec 01 (MBA)

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Schedule

Meets: Thursday, 8:30 – 11:20 am
Room: Cornell, D-313

Teaching Assistant   Office Hours

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Focus

Option pricing theory is one of the most exciting areas in finance. It started as an
esoteric and specialized subject forty years ago, to become a cornerstone of modern
finance today. The total notional amount of the global derivatives market represents
more than $600 trillion. It is thus as important as ever to understand the opportunities
as well as the risks implied by derivative instruments.

The main theme of this course is the use and pricing of forwards and futures, swaps
and options. The main tool we will use is the binomial model and we will also discuss
its close relative, the Black-Scholes model.

We will discuss several important applications, such as financial and commodity for-
wards and futures, interest rates derivatives, swaps, exotic options, corporate securities,
real options, credit instruments, and risk management. We will put emphasis on prac-
tical implementation. Expect numerous numerical examples.

Prerequisites

MGT 230 (Theory of Finance), basic knowledge of economics and capital markets, mathematics, and statistics. As the subject is inherently analytical, the course places slightly higher quantitative demands on students than the average MBA course.

Organization of the Course

The course will be in a traditional lecture format, with a midterm and a final exam. There are 5–10 problem sets. I strongly advise working in groups, but you will have to submit problem sets individually through Equiz.me (I will give more details about homeworks during the first class).

In addition to enrolling through the proper authorities, please send me an email with the following information:

- name
- program and year in program
- major (if any)
- your background in finance and mathematics
- telephone number
- any other information you consider important

Course Materials

Main textbook for the course

Robert McDonald, *Derivatives Markets*, Pearson Addison Wesley, second edition, 2006. This book is very good at explaining how options, futures, and other derivatives are used as well as how to price them. It offers a well balanced mix of intuition and rigor, and is easily accessible to MBA students and advanced undergraduates.

Optional textbook

John Hull, *Options, Futures, and Other Derivatives*, Prentice Hall, eighth edition, 2012. This book is very popular and widely used, although with more emphasis on the technical side.

Grades

40% final exam, 30% midterm, 20% problem sets, 10% class participation.

Course Outline

The following is a tentative list of topics covered in this class:

- Introduction to derivatives: payoff and profit diagrams, forwards and options (McDonald Chapters 1, 2, Appendix B)

- Binomial option pricing, risk-neutral pricing (McDonald Chapters 10, 11)

- Black-Scholes: basic formula, greeks, delta-hedging (McDonald Chapters 12, 13)

- Financial forwards and futures, commodity forwards and futures (McDonald Chapters 5, 6)

- Interest rates forwards and futures (McDonald Chapter 7)

- Swaps: interest rate swaps, currency swaps, commodity swaps, swaptions (McDonald Chapter 8)

- Beyond Black-Scholes: pricing and hedging volatility risk, variance and volatility swaps (McDonald Chapters 11.4, 12, 23)

- Risk management (McDonald Chapters 3, 4, 15)

- Additional topics as time permits:
  - exotic options
  - corporate securities
  - credit instruments
  - real options

References

[1] Hull, J. C. (2012). *Options, Futures, and Other Derivatives* (8th ed.). Prentice Hall.
[2] McDonald, R. L. (2006). *Derivatives Markets* (2nd ed.). Pearson Addison Wesley.