FE620: Pricing and Hedging

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Course Description

This course deals with basic financial derivatives theory, arbitrage, hedging, and risk. Risk neutral pricing models using the Black-Scholes formulae and binomial trees are discussed in detail. The course includes applications of asset price random walks, the lognormal distribution, and estimating volatility from historic data. Financial information and software packages available on the Internet are used for modeling and analysis.

Prerequisite: Multivariable Calculus, FE 610, and programming in C, C++, or Java.

Text Books

John Hull. *Options, Futures, and Other Derivatives*. 2005. Sixth Edition. Prentice Hall. ISBN: 0131499084

Grading: Please submit files in PDF format (using deskPDF)

Homework Assignments	60%	Total of 12 assignments (see Schedule), only 10 best grades are counted
Final Examination	25%	Five questions will be emailed to you, submit your answers in 24 hours
In Session Participation	15%	Initiate questions in session, your best 5 participations are counted

You are expected to read the corresponding book chapters before joining the session, to prepare questions you have from reading the chapter and to ask those questions in session (your best 5 will be counted as your in session participation grade). Submit previous session's homework before the session start (deadline), solution will be posted after the deadline. You can earn a bonus (1 point out of 10) by submitting solutions 3 days ahead of deadline.

Schedule

Week 1:	Introduction; Chapters 1	Homework
Week 2	Futures markets, Chapter 2	2.26
Week 3:	Hedging Strategies Using Futures, Chapter 3	3.26
Week 4:	Interest Rates, Chapter 4	4.27
Week 5:	Determination of Forward and Futures Prices, Chapter 5	5.25
Week 6:	Interest Rate Futures, Chapter 6	6.25
Week 7:	Swaps, Chapter 7	7.21
Week 8:	Properties of Options, Chapters 8 and 9	8.25
Week 9::	Trading Strategies and Binomial Trees, Chapter 10 and 11	11.20
Week 10:	Pricing of Stock Options, Chapter 13 (excl Section 13.6)	13.31
Week 11:	Options on Stock Indices, Currencies, and Futures, Chapters 14	14.46
Week 12:	The Greeks, Chapters 15	15.25
Week 13:	Volatility Smiles, Chapter 16	16.19
Week 14	Derivative Mishaps, Chapter 32 (not included in final) and Final Exam	Email released