

# STEVENS INSTITUTE OF TECHNOLOGY

## FE-620-C: Pricing and Hedging

### Syllabus (Fall 2015)

<b>Instructor:</b>	Dragos Bozdog Office: Babbio 429A Email: <a href="mailto:dbozdog@stevens.edu">dbozdog@stevens.edu</a> Phone: (201) 216-3527
<b>Time:</b>	FE-620-C: Friday (3:00pm-5:30pm)
<b>Room:</b>	Burchard 514
<b>Office Hours:</b>	By appointment
<b>Objective:</b>	This course deals with basic financial derivatives theory, arbitrage, hedging, and risk. Risk neutral pricing models using the Black-Scholes formula and binomial trees are discussed in detail. The course covers derivative instruments and underlines including stocks, bonds, forwards, futures, swaps, and options. By the end of the course, students will have good knowledge of how these products work, how they are used, how they are priced, and how financial institutions hedge their risks when they trade the products. Incorrect pricing of an instrument will create arbitrage opportunities. Risky positions are managed by proper hedging. Students are required to discover these arbitrage or hedging opportunities and enter simulated trades in an Interactive Broker (IB) paper trading account. IB paper trading accounts will be created for each student at the beginning of the semester.
<b>Prerequisite</b>	Multivariable Calculus, FE 610, and programming in C++, or Java.
<b>Required Textbook:</b>	John Hull. <i>Options, Futures, and Other Derivatives</i> . 2015. 9 <sup>th</sup> Edition. Prentice Hall. ISBN: 9780133456318
<b>Grading:</b>	Assignments 25% Project 25% Midterm 25% Final 25%

FE 620 - Course Schedule

	Topic	Textbook
Week 1	Introduction	Chapter 1
Week 2	Futures Markets Hedging Strategies Using Futures	Chapter 2 & 3
Week 3	Interest Rates	Chapter 4
Week 4	Forward and Futures Prices Interest Rate Futures	Chapter 5 & 6
Week 5	Swaps Asset Backed Securities	Chapter 7, 8 & 9
Week 6	Options Markets Properties of Stock Options	Chapter 10 & 11
Week 7	Trading Strategies Binomial Trees	Chapter 12 & 13
Week 8	Midterm Exam	
Week 9	BSM Model Employee Stock Options	Chapter 15 & 16
Week 10	Options on Stock Indices and Currencies Options on Futures	Chapter 17 & 18
Week 11	Greek Letters Volatility Smiles	Chapter 19 & 20
Week 12	Value at Risk Estimating Volatilities and Correlations for Risk Management	Chapter 22 & 23
Week 13	Credit Risk	Chapter 24
Week 14	Final Exam	