

STEVENS INSTITUTE OF TECHNOLOGY

FE-620: Pricing and Hedging

Syllabus

Instructor:	Dragos Bozdog Office: Babbio 429A Email: dbozdog@stevens.edu
Schedule:	Wednesday (3:00pm-5:30pm) Hanlon Lab 2 (Babbio 110)
Office Hours:	By appointment
Objective:	This course deals with basic financial derivatives theory, arbitrage, hedging, and risk. 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 or TD Ameritrade paper trading account. Information regarding the simulated trading platform and accounts will be provided.
Prerequisite	Multivariable Calculus and a programming language / scientific computing platform (example: R, Python, VBA, Matlab, Mathematica, C++, Java or similar).
Required Textbook:	John Hull. <i>Options, Futures, and Other Derivatives</i> , 10 th Edition. Pearson. (ISBN: 978-0134472089)
Grading:	Attendance 5% Assignments 35% Project 30% Final Exam 30%
Graduate Student Code of Academic Integrity:	All Stevens, graduate students promise to be fully truthful and avoid dishonesty, fraud, misrepresentation, and deceit of any type in relation to their academic work. A student's submission of work for academic credit indicates that the work is the student's own. All outside assistance must be acknowledged. Any student who violates this code or who knowingly assists another student in violating this code shall be subject to discipline. All graduate students are bound to the Graduate Student Code of Academic Integrity by enrollment in graduate coursework at Stevens. It is the responsibility of each graduate student to understand and adhere to the Graduate Student Code of Academic Integrity. More information including types of violations, the process for handling perceived violations, and types of sanctions can be found at www.stevens.edu/provost/graduate-academics .

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 Securitization Pricing Adjustments	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	BSM Model Employee Stock Options	Chapter 15 & 16
Week 9	Options on Stock Indices and Currencies Options on Futures	Chapter 17 & 18
Week 10	Greek Letters Volatility Smiles	Chapter 19 & 20
Week 11	Basic Numerical Procedures Value at Risk and Expected Shortfall	Chapter 21 & 22
Week 12	Credit Risk	Chapter 24
Week 13	Thanksgiving Recess – No Class	
Week 14	Energy and Commodity Derivatives	Chapter 35
Week 15	Project Presentations	