FIN 6360 Options and Futures Markets Summer 2018

Course Information

FIN6360 ***Options and Futures Markets*** ***Classroom: JSOM 11.202***
Thursday 6 – 10 PM

Professor Contact Information

Instructor: Rajesh Ghai

Email: rxg170730@utdallas.edu (Most efficient way to get in touch)

eLearning: class announcements, homework assignments, class notes/handouts, the updated syllabus and other reading materials will all be posted on eLearning.

Course Pre-requisites, Co-requisites, and/or Other Restrictions

FIN 6306

Course Description

This course covers a broad range of topics in financial derivatives and risk management. These topics include pricing, hedging and trading strategies of widely-used financial derivatives such as forwards, futures, swaps, and options, and various risk measures for the portfolio of derivatives. Derivatives have become increasingly important in financial markets as evidenced by their extraordinary growth and use over the past several decades by financial institutions and firms for managing the varied risks of their assets and liabilities. The focus of this course is not only on the mechanics and analytics of financial derivatives, but also on their underlying economics principles such as the argument of no-arbitrage pricing and risk-neutral valuation. We also examine the assumptions and limitations underlying these financial models and develop a basic understanding of when to use and when not to use some of these financial models in risk management. Although an applied approach dominates the course, each topic will be explored with a theoretical exposition. In-depth discussions of the fundamental concepts and theoretical reasoning are provided through various examples. To develop quantitative skills in the analysis of financial derivatives and risk management, we solve a wide range of problems throughout the course.

Student Learning Objectives/Outcomes

Upon successful completion of this course, students should be able to:

- be familiar with most of the financial derivatives products they are likely to encounter in financial markets
- have a good knowledge of how the basic types of derivative instruments work and how they are used in financial markets and how financial institutions and firms hedge their risks when they trade these financial derivatives products
- master the fundamentals of derivative pricing such as pricing forwards and futures
- value interest rate swaps and fixed-for-fixed currency swaps
- grasp the mechanics of options markets

- master the properties of options such as put-call parity.
- develop competencies in options trading strategies such as spreads and combinations
- understand the no-arbitrage arguments and the principle of risk-neutral valuation
- construct one-step and two-step binomial trees for pricing options
- have a good understanding of the Black-Scholes-Merton model, its assumptions and pricing formulas
- know the Greek letters and implied risk-neutral distributions
- grasp the value-at-risk measure and know how to compute VaR and Credit VaR
- understand default intensity and estimate default probabilities by various approaches including bond yield spreads and Merton's model

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Required Textbooks and Materials

Options, Futures, and Other Derivatives by John C. Hull, Pearson Education, Inc., 9th edition or 10th edition (Hereby denoted as JCH)

Suggested Course Materials

An Introduction to Derivative Securities, Financial Markets, and Risk Management by Robert A. Jarrow and Arkadev Chatterjea, W W Norton & Company, 2013

When Genius Failed: The Rise and Fall of Long-Term Capital Management by Roger Lowenstein, Random House, 2000.

Inventing Money: The Story of Long-Term Capital Management and the Legends Behind It by Nicholas Dunbar, John Wiley & Sons, 2000.

The Wall Street Journal.

Financial Times.

Tentative Academic Calendar

Date	Topics	Readings (JCH Chapters)
May 31	Course Overview: Options, Forwards & Futures Markets	1 & 2
Jun 7	Hedging with Futures, Pricing Forwards and Futures	3 &5
Jun 14	Interest rate Futures, Swaps	4, 6& 7
Jun 21	Mid-term	
Jun 28	Mechanics of Options, Stock Options, Options Trading Strategies	10, 11 & 12
Jul 5	Binomial Trees, Black Scholes model	13, 15
Jul 12	Options on Stock Indices, Greek letters	17, 19
Jul 19	Value at Risk, Credit Risk	22, 24
Jul 26	Final Review	
Aug 2	Final Exam	

Grading Policy

The final course grade will be based on regular homework, midterm and final exams, and class participation. The weights are as follows:

Homework 20%
Midterm Exam 35%
Final Exam 35%
Class Participation 10%

Based on the aforementioned weighted average, the final letter grades will be assigned as follows: A (90-100), B (80-89), C (70-79), D (60-69), F (59 or below).

Course & Instructor Policies

Homework Policies: Homework will be assigned weekly and they require independent work. Late homework assignments will NOT be accepted (two of your lowest homework scores will be dropped). Please plan accordingly!

Attendance: Students are expected to attend all classes. Non-attendence will impact class participation grade.

Exam Policies:
• All exams are closed-book and closed-notes in-class exams. However, you are allowed to have a one-page (letter size, double-sided) formula sheet for each exam.

No make-up exams will be given. If you have a University-excused/authorized absence, you must notify me BEFORE the exam. Such students must provide official written verification of such an absence. Students missing an exam for unauthorized reasons will receive 0 (zero) points on the exam.

• Calculators will be needed for the exams. It should be a ”scientific” calculator with exponential and log functions, but nothing fancier than that is required.

No Extra Credit or Assignment to improve your grade.

Comet Creed

This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same:

“As a Comet, I pledge honesty, integrity, and service in all that I do.”

UT Dallas Syllabus Policies and Procedures

The information contained in the following link constitutes the University’s policies and procedures segment of the course syllabus.

Please go to http://go.utdallas.edu/syllabus-policies for these policies.

The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor.