ACST828 OPTIONS, FUTURES AND DERIVATIVES

Assumed knowledge: Students are assumed to have strong mathematical skills, statistical and financial background and proficiency in spreadsheet programming as well as knowledge of the fundamentals of finance.

Description

This unit aims to provide students with a knowledge and understanding of the principles and techniques underlying the theory and practice in Derivative Markets. You will learn about different modelling techniques and will need to understand the usefulness and shortcomings of these techniques when applied in practice. It primarily aims to give you the tools for quantitative analysis of transactions and securities including valuation and risk management for capital projects and securities. The unit also aims to assist you to develop an ability to use the results derived from quantitative analysis along with professional judgement in the analysis of practical problems in the Financial Derivatives and Capital Markets area. In practice, the decision to invest in an investment project, a security, or a complex derivative will not be clear cut and it will always be necessary to make decisions based on competent analysis and an element of judgement.

Topics

- Mathematical Background: review of calculus, probability / statistical theory and linear algebra
- Bonds, interest rate markets and products
- Forwards, Futures and Swaps
- Options - basic concepts and trading strategies
- Options - models for prices and returns and the Black Scholes approach
- Hedging and Portfolio Insurance
- Alternatives to Black Scholes
- General Approach to Valuation
- Numerical Procedures: binomial trees, finite difference methods & monte carlo simulation
- Interest Rate Derivatives
- Exotic Options
- Market Risk, Credit Risk and Capital Adequacy

Assessment

Three assignments	50%
Final exam	50%

Textbooks

- Options Futures and Other Derivatives (6th Edition) by John Hull
- Solutions Manual to Options Futures and Other Derivatives (6th Edition) by John Hull

Staff

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Lectures:	Tuesday 1pm-3pm E7B264
Tutorial / Computer Lab :	Tuesday 3pm-5pm E4B102