DISCIPLINE SPECIFIC ELECTIVE COURSE 31(DSE-31) : FINANCIAL DERIVATIVES

Credit distribution, Eligibility and Pre-requisites of the Course

Semester	Course title & Code	Credits	Duration (per week)			Eligibility Criteria	Prerequisite
			Lecture	Tutorial	Practical / Practice		
VI/VIII	Financial Derivatives ECON077	4	3	1	0	Class XII with Mathematics	Introductory Mathematical Methods for Economics ECON002

Learning Objectives

- To equip students with essentials tools for understanding Finance at undergraduate level.
- To provide analytical knowledge to understand complex financial Derivatives.
- To provide advance skills for pricing and formulating trading strategies using Derivative products

Learning outcomes

- After studying this course, students would be able to understand the core concepts of financial derivates. The course would develop an analytical knowledge for understanding the mechanics and characteristics of derivative products such as Future, Options and SWAP agreements.
- After studying this course, students would be able to understand and formulate complex trading strategies adopted using financial derivate products.

SYLLABUS OF DSE: FINANCIAL DERIVATIVES

Unit 1: Futures Contract & SWAP (15 Hours)
Part I: Futures/Forward Contracts: Properties, Pricing and Hedging
a) Introduction to derivatives and options; forward and futures contracts; options; other derivatives
Hull Chapter - 2: Mechanics of Futures Markets (Sections 2.1 - 2.4 & 2.11)

b) Forward and future prices
Hull Chapter-5: Determination of Forward & Futures Prices (Sections 5.1 - 5.5, 5.9, 5.11 & 5.12)

c) Stock index futures & the use of futures for hedging
Hull Chapter - 3: Hedging Strategies using Futures

Part II: Interest Rate Futures
d) Interest rate futures & duration-based hedging strategies
Hull Chapter - 6: Interest rate futures (6.1 to 6.4) [exclude page-158 & 159]

Part III: SWAP & FRA
e) Forward Rate, Forward Rate Agreement and SWAP
Hull Chapter - 4: Interest rate (4.1 to 4.3, 4.6 and 4.7)
Kolb Chapter – 37: Forward Rate Agreements (Page 575- 577)
Hull Chapter - 7: Swaps (7.1 to 7.4)

Kolb Chapter – 1: Swap Contracts (Page 11-13); Chapter - 28: Pricing and Valuation of SWAP (page 407-410)

Unit 2: Options Contract (30 Hours)
Part I: Introduction and Properties of Option Contracts
f) Option markets; call and put options; factors affecting option prices; put-call parity
Hull Chapter - 10: Mechanics of options markets (10.1 to 10.7);
Hull Chapter -11: Properties of stock options (Full Chapter)

Part II: Option Strategies
g) Option trading strategies: spreads; straddles; strips and straps; strangles
Hull Chapter -12: Trading strategies involving options (Full Chapter)

Part III: Pricing of Options, BSM and Greek letters
h) The principle of arbitrage; discrete processes and the binomial tree model; risk neutral valuation, Black Scholes Merton (BSM) Model, Greek letters
Hull Chapter - 13: Binomial trees. Sections 13.1-13.4, 13.6 - 13.9 & Appendix (Derivation of BSM)
Hull Chapter - 14: Section 14.6 ITOˆ ’S Lemma
Hull Chapter - 15: The Black–Scholes–Merton Model: Sections 15.3, 15.4, 15.5, 15.6, 15.8,15.11
Hull Chapter - 19: The Greek Letters

Recommended readings

Hull, John C.,Options, Futures and Other Derivatives, Pearson Education, Inc, 9th Edition (Global Edition), 2018.

Robert W. Kolb, James A. Overdahl, Financial Derivatives: Pricing and Risk Management, John Wiley & Sons, 2010

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.