Discipline Specific Elective Course- 7.4(DSE-7.4): Hedging Financial Products: Futures, Options and Swaps

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Hedging Financial Products: Futures, Options and Swaps DSE-7.4	**4**	**3**	**1**	**0**	**Pass in Class XII with Mathematics/Accountancy**	**Studied DSE-4.2 Investment Management**

Hedging Financial Products: Futures, Options and Swaps
BCH: DSE- 7.4

Learning Objectives:

The course aims to equip the students with skills of the risk management to manage the investment portfolios. It traces the relevance of hedging in investments, its instruments for risk management, along with the development and trading of derivative markets in India, specifically on futures and options.

Learning Outcomes: After completion of the course, learners will be able to:

1. Critically analyse the role of hedging in investment, historical development of the derivatives market in India and its regulation.
2. Evaluate the hedging instruments, trading strategies of futures and options.
3. Examine pricing of futures and options and calculate pay-offs of call and put options.
4. Gain an insight into the trading, clearing and settlement mechanism of futures and options.
5. Evaluate the mechanics of risk hedging with the help of swaps.

Course Contents:

Unit 1: Introduction (9 hours)

Hedging; Meaning, types, instruments and features of derivatives Meaning, definition and features of derivatives, Functions of derivatives, Participants in derivatives market, Cash market vs. derivatives market, Evolution of derivatives market, Introduction of derivatives trading in India, L. C. Gupta Committee and J. R. Varma Committee on derivatives. Recent developments in the derivatives market in India. Regulations of derivatives market.

Unit 2: Instruments of Hedging (11 hours)

Concept and Types of derivatives, Financial derivatives: Meaning and features of forward contracts, limitations of forward markets; Spots and Forward Rate, Meaning and features of Futures Contracts, Difference between futures and forwards contracts, Currency Derivatives, Exchange traded and over the counter derivatives, Index hedging, Types of option contracts, Options Trading strategies, Futures and Options pay off. Commodity Derivatives and other contemporary derivatives.

Unit 3: Pricing of Futures and Options and Swaps (18 hours)

The cost of carry model and Expectancy model for stock and index futures- cash price and future price, Arbitrage opportunity; Factors determining options pricing, Option pricing models: Binomial pricing model, The Black and Scholes model, Pricing of Index options.

Introduction to Swaps, Overview of Interest Rate Swaps, Interest rate futures, Cross Currency Swaps, Pricing of Swaps, Equity and Commodity Swaps.

Unit 4: Trading, Clearing and Settlement (7 hours)

Prerequisites for trading in derivatives market, Futures and Options trading system, Contract specification for stock and index, Eligibility for trading charges, Derivatives trading risks, Clearing entities and their role, Clearing mechanism: adjustment for corporate actions, Open position calculation; Margining and settlement mechanism, Risk management, Concept and Mechanics of Standard Portfolio Risk Analysis (SPAN).

Exercises:

The learners are required to:

1. Identify at least five investment schemes which used hedging for better return of portfolio.
2. Create dummy portfolios and using index derivatives and options to minimise risk and improve the portfolio return, using spreadsheet.
3. Download spot and futures (continuous series) data of any five financial assets for a period of one year. Calculate return of spot, future series and analyse both the series using charts.
4. Download complete data of two futures contract one exhibiting normal backwardation and another Contango. Use a chart to show convergence of these contracts to the spot price on expiry date.
5. Assume that you purchase a financial futures contract from NSE. Compute the Mark-to-Market (MTM) margin for the next 10 days for that futures contract using excel spreadsheet.
6. Evaluate the mechanics of risk hedging with the help of swaps, offer combinations of swaps used by two or three institutions, using spreadsheets.

Suggested Readings:

- David and Thomas (2007). Derivatives, (1st Edition), Oxford University Press, Delhi.
- Gupta, S.L, Financial Derivatives: Theory, Concepts and Problems (2017), PHI Learning Publications. House.
- Hull, J. C. (2018). Options futures and other derivatives (10th Edition). Pearson Education India.
- Hull, J., Treepongkaruna, S., Colwell, D., Heaney, R., & Pitt, D. (2013). Fundamentals of futures and options markets. Pearson Higher Education AU.
- Varma, Jayanth R. (2011). Derivatives and Risk Management, Tata McGraw Hills, New Delhi.
- Vohra, N.D. and Bagri, B.R. (2011). Futures and Options, (2nd Edition), Tata McGraw Hills, New Delhi.

Note: Suggested readings will be updated by the Department of Commerce and uploaded on Department's website.