DISCIPLINE SPECIFIC ELECTIVE COURSE 14 (DSE-14): FINANCIAL RISK MANAGEMENT

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
		Lecture	Tutorial	Practical/ Practice		
Financial Risk Management (DSE 14)	**4**	**3**	**1**	**0**	**Class 12**	**None**

Learning Objectives

The course aims at:

- To understand various types of financial risks (market, credit, liquidity, operational, etc.) faced by business and financial institutions.
- To learn necessary tools to measure, quantify, and assess financial risks using both qualitative and quantitative techniques.
- To develop, design and implement effective risk management strategies, including the use of financial instruments such as derivatives, hedging, and diversification.
- To apply theoretical knowledge to real-world financial risk scenarios, enabling them to make informed decisions in dynamic market environments.

Learning outcomes

By studying this course, the students will be able to:

- Identify different types of financial risks (market, credit, liquidity, operational) and understand their potential impact on businesses and markets.
- Develop proficiency in using various risk measurement tools and models to quantify financial risk exposure.
- Assess and implement strategies for mitigating financial risks, such as diversification, hedging, insurance, and the use of financial derivatives.
- Make informed and well-structured risk management decisions in real-world contexts, applying their knowledge to optimize financial stability and performance.

SYLLABUS OF DSE-14

Unit 1: Risk Incorporation in Projects **(15 hours)**

Inflation adjustment and Adjusted Cost of Capital. Conventional Risk Handling techniques in Capital Budgeting: Sensitivity Analysis, Risk Adjusted Discount Rate, Certainty Equivalent, Simulation. Statistical Techniques to handle risk in Capital Budgeting: Standard Deviation, Coefficient of Variation, Probability Distribution *(Cash Flows are independent, fully dependent and partially dependent on other cash flows)*, Decision Trees.

Unit 2: Risk Management in Derivatives **(12 hours)**

Meaning and Types, Stock Futures, Forwards & Options, Commodity Futures, Weather Derivatives, Hedging/Risk Management through stock futures and payoffs, Stock Options: In the money, At the Money and Out of Money, Payoffs under Stock Options Margin Adjustment for futures., Intrinsic Value, Simple Stock, Futures and Options Combination Strategies (Neutralizing the risk, Spread, Straddle, Collars, Covered call). Interest Rate Swaps.

Unit 3: Risk Management through Pricing of Derivatives (9 hours)

Pricing of Forwards, Option Pricing using Binomial Model and Black Scholes Model, Put Call Parity Equation, Option Greeks: Meaning and Order of Greeks, Delta of European Stock Options, Delta and Black Scholes Model, Delta Hedging. Sensitivity of an Option: Vega, Theta , Rho & Lamda. Hedging through Gamma & Vega, Making a Portfolio Gamma Neutral, Gamma's relation with other Greeks.

Unit 4: Credit Rating and Risk Management in Insurance (9 hours)

Credit Rating: Credit rating in the banking sector, questionnaire method, 'Z' Score, Sensitivity and Transition Probability Matrix, CIBIL. Insurance: Premium Determination for Life: Endowment and Term Policies and Non-Life Policies, Use of Mortality Tables.

References

Essential

1. Hull. J.C & Basu S., Futures Options and Other Derivatives. Pearson Education
2. Vohra, N.D. & Bagri, B.R., Futures and Options, Tata McGraw-Hill.
3. Rustagi, R.P., Investment Management. Sultan Chand & Sons.
4. Financial management, R .P Rustagi, McGraw Hill

Additional

1. Parameswaran, S., Futures and Options. Tata McGraw Hill.
2. Bodie, Zvi., Kane, Alex & Marcus, Alan J., Investments, McGraw Hill.
3. Benninga, Simon, Financial Modelling with Excel, MIT Press

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