

Discipline Specific Elective Course- 8.4 (DSE-8.4): 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 (if any)
		Lecture	Tutorial	Practical/ Practice		
Financial Risk Management: DSE-8.4	4	3	1	0	Pass in Class XII with Mathematics/Accountancy	Studied DSE-7.4 Hedging Financial Products: Futures, Options and Swaps

Financial Risk Management

BCH: DSE- 8.4

Learning Objectives:

The course aims to provide the basic foundations to work in a world of finance with risk and arbitrage. It will equip students with analytical as well measurement tools of financial risk. Therefore, course should be relevant for those looking at a career opportunity in a global institution. The course analyses approaches to financial risk measurement and management and develops excel based models of measuring risk in asset classes.

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

1. Compare the different types of risk in financial market.
2. Evaluate financial risk.
3. Evaluate various techniques of measuring risk in financial market.
4. Perform quantitative analysis of risk in financial market.
5. Analyse credit, liquidity and operational risk.

Course Contents:

Unit 1: Introduction to Risk Management (10 hours)

The Concept of Risk, Risk versus Uncertainty, Different types of risk: Systematic and unsystematic risk. Risk management versus Risk avoidance; Risk Management Process; Risk Management Policies; Risk Immunization Strategies. Risk Environment in Global Banking and Finance, Episodes of Financial Crisis, Defining Risk in Asset Classes.

Unit 2: Measuring Risk and Tools of Risk Management (15 hours)

Methods of measuring and controlling risk – Statistical Method. Fixation and Delegation of Limits, Different Limits- Open Position / Asset Position Limits/ Deal Size/Individual Dealers/Stop Loss Limits. Margins: Value at Risk Margin, Extreme Loss Margin, Mark to market Margin. Insurable and non-insurable tools; Financial Derivatives as a tool of risk management: meaning, types and uses. Risk and Return,

Volatility measurement (SD, EWMA, GARCH processes, Implied Volatility, VIX, Volatility Clustering, Time varying volatility). Market Risk Measurement Techniques, Value-at-Risk (VaR), Variance-Covariance Approach.

Unit 3: Quantitative Analysis (10 hours)

Measuring risk using Simulation methods, Stress testing and back testing, Extreme Value methods, Monte Carlo methods in measuring risk, Portfolio VaR using stochastic simulations, Sector Risk Analytics, Active Portfolio Risk Management.

Unit 4: Risk Management in Different Asset Classes (10 hours)

Equity Portfolio Risk, Measuring downside exposure in equity, Credit Risk Basics (PD, LGD), Measuring and Managing Credit Risks, Market-based measurement of credit risk, Contingent claim approach - the KMV Model, Credit VaR, Credit Derivatives, Liquidity Risk, Liquidity trading and funding risks, tightness, depth, and resilience in trading liquidity, marked-to-market and market-to-exit concepts, Liquidity value at risk. Measurement of Operational Risk.

Note: Use of Spreadsheet should be encouraged for doing basic calculations, quick understanding, problem solving and giving students subject related assignments for their internal assessment purposes.

Exercises: The learners are required to:

1. Calculate systematic and unsystematic risk in various assets.
2. Analyse different methods of measuring and controlling risk.'
3. Apply tools of risk management on actual data.
4. Estimate VaR for a hypothetical portfolio.
5. Analyse risk management techniques in different asset classes.

Suggested Readings:

- Arora R.K , Financial Risk management, Wiley Publication.
- Chance, Brooks. An Introduction to Derivative and Management, Cengage learning.
- George, E. R., & Michael, M. (2017). Principles of Risk Management and Insurance. London. Pearson.
- Ghosh, R. (2020). Risk Management and Derivatives. New Jersey: Wiley.
- Harrington, S., & Niehaus, G. (2017). Risk Management and Insurance. New York: McGraw Hill Education.
- Hopkin, P. (2018). Fundamentals of Risk Management: Understanding, Evaluating and Implementing Effective Risk Management. London: Kogan Page.
- Loomba,J. Risk Management and Insurance Planning PHI learning
- Madhumathi / Ranganatham. Derivative and Risk Management. Pearson.
- Marshall, Johon F. and Bansal, V. K., Financial Engineering, PHI Learning.
- Watsham Terry J., Futures and Options in Risk Management, Thomson Learning.

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