DISCIPLINE SPECIFIC ELECTIVE COURSE 5 (DSE-5):
Investment and Portfolio Optimization

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		
Investment and Portfolio Optimization (DSE 5)	4	3	1	0	Class 12	None

Learning Objectives

This course aims at:

- Provides a broad overview of investment and risk associated with it
- Measurement and analysis of return and risk of an equity on the basis of fundamental and technical analysis
- Understand bond fundamentals and interest rate theories
- Construction, analysis and evaluation of a portfolio of securities.

Learning outcomes

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

- Provide a theoretical and practical background of investments valuation
- Do valuation of equity and debt instruments
- Analyse and manage the bond as well as equity portfolios in the real word.
- Understand how to measure the portfolio performances

SYLLABUS OF DSE-5

Unit 1: Basics of Investment (6 hours)

Investment alternatives and objectives, investment, gambling, speculation, introduction to risk – return trade off: types of risks, sources of risks, measures, analysis, determinants of required rates of return and relationship between risk and return. Types of returns: Holding Period Return (HPR) & Compound Annual Growth Rate (CAGR). Attributes of a good investment. Types of assets: Real Assets versus Financial Assets. Investment Process.

Unit 2: Analysis of Equity (12hours)

Measurement of return and risk of equity shares. Approaches to equity analysis, Fundamental Analysis- Economy, Industry, Company Analysis (EIC framework); Equity Valuation Models (DDM, P/E Ratio model and Free Cash Flow Valuation approach). Valuation based on other ratios-P/B ratio, Price to Sales ratio and Price to Cash flow ratio. Technical Analysis – Concept, market indicators and specific stock indicators.

Random Walk Theory & Efficient Market Hypothesis (EMH): Forms, empirical evidence and tests.

Unit 3: Analysis of Bonds (12hours)

Bond fundamentals, types of bonds & risks in bonds. Valuation of bonds. Bond yields-current yield and Yield-to-maturity (YTM). Bond price-yield relationship, analysis of risks in bonds-duration and modified duration. Theories of term structure-Expectations theory, Segmented markets theory and Liquidity Preference theory. Yield curve.

Unit 4: Portfolio Construction, Management and Evaluation (15hours)

Modern Portfolio theory: Diversification & portfolio risk, Harry Markowitz model, measurement of portfolio risk and return, measurement of co-movements in security returns, calculation of portfolio risk, efficient frontier and optimal risky portfolio. Riskless lending & borrowing and capital market line.
Capital Asset Pricing Model: Development of the CAPM, assumptions, beta and security market line. Sharpe's Single Index Model. Portfolio performance evaluation- Sharpe's index, Treynor's Index, Jensen's alpha, and Information ratio.
Note: Some case studies related to above topics are required to be discussed.

Essential/recommended readings

1. Bodie, Zvi., Kane Alex and Alan J. Marcus. Investments. McGraw Hill.
2. Chandra, P. Security Analysis and Portfolio Management. Tata McGraw Hill.
3. Francis. J.C. & Taylor, R.W. Theory and Problems of Investments. Schaum's Outline Series. TMH. New Delhi,
4. Fischer, Donald E. and Ronald J. Jordan. Security Analysis and Portfolio Management. PHI Learning.
5. Pandian, Punithavathy. Security Analysis and Portfolio Management. 2nd Edition. Vikas Publishing House. New Delhi
6. Reilly, Frank K, and Brown, Keith C. Investment Analysis and Portfolio Management. Cengage Learning.
7. Rustagi, R.P. Investment Management. Sultan Chand & Sons.

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