

---

# Portfolio Management

---

## Overview

This course discusses necessary analytical techniques and methods used in the portfolio management process. The course focuses on details of the Portfolio Construction – Markowitz and CAPM. Key concepts of portfolio theory such as risk elimination and diversification are examined and explained, and their implications for investment strategy explored. The course also discusses various tools used for measuring portfolio performance.

## Learning Outcome Statements

- Detailed understanding of systematic portfolio management science
- Comprehension of portfolio mathematics and statistics used in Portfolio Management
- Learn techniques of managing Equity & Bond Portfolio
- Comprehend performance tools

## Key Contents

- Introduction to Portfolio Management
  - Goal of Portfolio Management
  - Portfolio Managers – 3 Major activities
  - Investment Managers
  - Fundamental analysis
  - Passive vs. active management
  - Asset classes
  - Relationship between risk and return
  - Market efficiency
- Basic Statistics & Mathematics in Portfolio Management
- Portfolio Construction
  - Portfolio Construction Process
  - Markowitz Model
  - Security & Portfolio Return
  - Measuring Risk / Risk in a portfolio context / Diversification / Security Correlation & portfolio Risk / Adding Securities to Eliminate Risk / Systematic & Diversifiable Risk
  - Risk-Return & Weighting Changes

- Short Selling
- Required Model Inputs
- Asset Allocation
  
- **CAPM Assumption & Implications**
  - Lending & Borrowing / the Capital Market Line
  - The Security Market Line / Capital Asset Pricing Model
  - Risk-Return Relationship / Undervalued & Overvalued Securities / Empirical Test
  - Portfolio Risk & Return / Applied Portfolio Analysis
  - Fundament Attributes
  - Measuring Beta
  - Fundamental Beta
  - Forecast Betas
  
- **Bond Valuation & Risk Analysis**
  - Valuation Theory
  - Valuation of a Perpetuity / Bond Valuation / Bond Pricing Theorems
  - Duration & Interest Rate Sensitivity
  - Convexity
  - Adjusting for Convexity / Determinants of Convexity / Applying Convexity Analysis
  - Reinvestment Rate Risk
  - Reinvestment Risk Control / Immunization
  - Risk Premium
  - Credit Quality Determinants
  - Fundamental Sources of Risk
  - Interest Rate Risk
  
- **Applying Valuation Model Methods**
  - Stock Valuation Model
  - Dividend Capitalization Model
  - Stock Value & Differing Model Inputs
  - Price / Earnings Ratio & the Discount Rate / Dividend
  - Capitalization Model: Simplified Form / Estimating the Discount rate / cyclical companies / Application of Technique
  - Growth Stocks & the Two-stage Growth Model
  - Valuing a Growth Stock
  - The Market Line Technique
  - Market Line Uses / Evaluation of Individual Securities
  - Extra market Factor
  
- **Asset Class Management**
  - Disciplined Stock Selection
  - Active-Passive Strategies
  - A Stock Selection Strategy
  - Designing the Investment Process Measuring Predictive Ability
  - Composite Forecasting
  - Generating Return Forecasts and Distribution
  - Adjusting for predictive Capability
  - Transaction Costs
  - Applied Composite Forecasting
  - Portfolio Construction & Optimization

- Managing the Process over Time
- Performance of Strategy over Time
- Long / Short Strategies
- Return Patterns
- Long / Short Risk
  
- Equity Investment Styles
  - Classification by size
  - Combining Strategies
  - Growth & Value Stock Groupings
  - Sustainable Growth-Dividend Yield Characteristics
  - Growth / Value Performance Indexes
  - Grouping by Price Action
  - Cluster Analysis
  - Portfolio Construction / Passive Strategy
  - Forecasting Growth Stock Performance Indexes
  - Interest Rate Impact / Yield Curve / Relative P/Es
  - Optimum Weighting
  
- Managing the Bond Portfolio
  - The Term Structure of Interest Rates
  - Yield Curve & Forward Rates / Term-Structure Models
  - Bond portfolio Analysis
  - An Active Bond Strategy / Scenario Forecasting
  - Valuing Embedded Options
  - Changing Volatility & Bond Value
  - Changing Credit Quality
  - Ratings Change & Performances / Monitoring Bond Quality Bond Swaps
  - Substitution Swap / Inter market Spread Swap / Tax-Motivated Swap
  - Foreign Bonds
  
- Evaluating Portfolio Performances
  - Evaluating Investment Strategies
  - Calculating Fund Returns
  - Risk-Adjusted Performance
  - Return per Unit of Risk / Different Return (Alpha) / Comparison of Performance Measures
  - Stock Selection
  - Market Timing
  - Cash Management Analysis / Probability of Success
  - Multifactor Adjustment
  - Aggregating Return Components