

TREASURY

1. Asset Liability Management
2. Treasury Audit
3. Exotic Options
4. Fixed Income Instruments and Markets
5. Treasury Products and Practices
6. Interest Rates

ASSET LIABILITY MANAGEMENT

Learning Outcome Statements

- Understand the importance of Asset Liability Management and ways to manage it
- Learn the fundamental concepts behind management of assets and liabilities
- Learn about quantification of interest rate risk
- Learn how to identify and proactively manage asset/liability exposures to both accounting earnings and market risk

Key Contents

- Scope of ALM Function
 - Interest Rate Exposure Management
 - Integration of Market risk and Credit risk within the business
 - Budgeting, Funding and Capital Planning
 - FX Management
 - Trading Risk Management
- ALCO and its Objectives
 - Asset, Liability Committees
 - Role, Composition, and Tasks
 - Policies and Procedures
- Analytical Framework on Interest Rate Risk Management
 - Zero coupon yield curves
 - Par curve & rates
 - Discount factors
 - Derivatives and their role in ALM
- Duration & Convexity
 - Role of duration in risk management
 - Convexity
 - Duration of Single Items, Portfolios, and Balance Sheet
 - Techniques to manage Duration
- Measuring Risk - Simulation Techniques
 - Interest Rate shocks
 - Path risk analysis
 - Monte Carlo techniques
- Capital Adequacy Norms
 - Credit Risk Capital
 - Market Risk Capital
 - Risk-adjusted Return on Capital (RAROC)
- GAP Analysis
 - Mechanics, Assumptions, and Limitations
 - Static, cumulative and dynamic reports
 - The Relationship Between Gap and Income Statement
- Interest Rate Exposure (IRE)
 - Types of Gaps
 - IRE calculations
 - Re-pricing profiles
 - Defeasance period
 - IRE Time Frame
 - Cost to Close (CTC)
 - Relationship between IRE and CTC
 - Accrual Triggers
- Liquidity Management
 - Liquidity risk
 - Balance Sheet Management
 - Liability Management
 - Asset Management
 - Liquidity ratios
 - Stress testing and Triggers
- Funds Transfer Pricing and Performance Measurement
 - Transfer Pricing for Interest Rate risk
 - Loan and Deposit Pricing Implications
 - Segregation of Interest Rate Risk
 - Accountability of Risk management

ASSET LIABILITY MANAGEMENT

Key Contents

- Performance Measurement
 - Principles of measurement
 - Performance measurement issues
 - Risk management and performance
 - Designing a performance measurement
- Strategies for ALM
 - Business Strategies: Mix/Pricing of Assets, Liabilities
 - On-Balance Sheet Investment and Funding Strategies
 - Off-Balance Sheet Hedging Strategies
 - Various strategies for Interest Rate Risk in Portfolio Management
 - ALM's pivotal role in enterprise-wide Risk Management
 - Management of Foreign Exchange and Other Risks
 - ALM in a Multi-currency Balance Sheet

TREASURY AUDIT

Learning Outcome Statements

- Comprehend complexity of treasury functions
- Make auditors examine necessary checks & balances for the treasury

Key Contents

- Overview of Treasury
- Introduction to Treasury and Treasury Products
- Foreign Exchange Market Products
 - A review of the Foreign Exchange Market
 - Spot Foreign Exchange Transactions
 - Forward Foreign Exchange Transactions
 - Foreign Exchange Swaps
- Money Market & Capital Market Products
 - Review of Money Market and Capital in Local Economy
 - Commonly used Money Market Products
 - Borrowing and Lending
 - Floating Rate notes
 - Bonds
 - Repos and Reverse Repos
- Introduction to Derivatives Products
 - The overview of derivative markets
 - Swaps Contracts
 - Creating long-dated FX contracts
 - Introduction to FX Options & Structured Products
- Introduction to Market & Credit Risk Management & Related issues – Key points
 - The need for understanding market risk
 - Risk assessment and management process
 - Types of Market risk
 - Managing risk
 - Risk Management process
 - Framework of price risk
 - What is Value at Risk?
 - Risk measurement and accounting
 - Price risk management
 - Trading accounts limits and triggers
 - Accrual Account limits
- Risk management controls
- Liquidity risk & liquidity monitoring
- Role of ALCO
- Confidence interval
- Probability of loss
- Concept of Zero coupon discount rates and factors
- Concept of forward rates
- Calculation of factor sensitivity
- Duration & modified duration
- Credit Risk in Treasury
- Other Controls
 - Model validation
 - Certification of Financial Models
 - Model validation process
 - Rate reasonability
 - Stress Testing
 - Product Programs
 - Dealing room practices
 - Off premises trading procedures
 - After hour trading procedures
 - Suitability standards for derivative business
- Auditing Treasury
 - Issues of Control
 - Roles and responsibilities
 - Maker Checker Controls
 - Customer Relationship and documentation
 - Internal compliance
 - Regulatory Compliance
 - Accounting Issues
 - Legal Issues
 - Market Risk Functions and related control issues
 - Checks and balances
 - Personnel review
 - Technology review
 - Process review
 - Product control process and review

EXOTIC OPTIONS

Learning Outcome Statements

- Examine various aspects of exotic options
- Pricing mechanism
- Hedging & risk management
- Volatility modeling
- Various numerical techniques for pricing exotic options

Key Contents

- Introduction to Options pricing theory, Risk Management concepts and hedging
 - Option Pricing
 - Black Scholes pricing equation
 - Deterministic and Random Variables
 - Intrinsic and Time Value
 - Pricing Example and Issues
 - Option Hedging & Risk Management issues
 - Options Greeks
 - Understanding and calculating volatility
 - Problems with volatility
 - Relationship Between various Greeks
 - Call Put Parity Equations
 - Assumptions in Black Scholes pricing equations
 - Arbitrage in Options
 - Why Exotic Options?
- Introduction to Exotic Options
 - Simple Exotic Options & Products
 - Bermudan Options
 - Digital or Binary Options
 - Pay later or Contingent Premium options
 - Delayed Options
 - Chooser's Options
 - Power Options
 - Compound Options
 - Cliquet or ratchet options
 - Shout Options
 - Soft Strike Options
 - Ladder Options
 - Path Dependent Exotic Options
 - Asian Options or Average Rate Options
 - Average Strike Options
 - Look Back Options
 - Barrier Options
 - Complex Barrier Options
 - Options on Multiple Underlyings
 - Rainbow Options
 - Spread Options
 - Basket Options
 - Equity linked Foreign exchange options or Quantos
- Volatility modeling
 - Historical volatility, Implied Volatility
 - Accurately modeling the Smiles
 - How to determine it?
 - Reasons for term structure of volatility
 - Effects of stochastic volatility on hedging of options
 - Estimation of volatility
- Numerical Techniques in Pricing
 - Monte Carlo Simulation Methods
 - For Pricing and hedging
 - Example of Monte Carlo Simulation
- Risk Management Strategies for Various Exotic Options
 - Role of derivatives in risk management process
 - Shadow Greeks and its applications
 - Management of Exotic options book
 - Option hedging models – Dynamic and Static Hedging of exotic options
 - Toxicity of Exotic options and mechanism to manage them
 - Inefficiencies of hedging models
 - Issues with Options hedging using Greeks
 - Limitations of conventional risk management process

FIXED INCOME INSTRUMENTS AND MARKETS

Learning Outcome Statements

- Gain an overview of bond & fixed income markets and the current trends in global issuance
- Determine a methodology to structure, price and position bond and fixed income instruments to maximize investment, financing and risk management activities
- Develop an understanding of the syndicated loan process and how to create facilities to match client needs
- Examine how bond & fixed income instruments are rated and the implications of the rating
- Analyze yield curves and the implications for future interest rate movements
- Understand the differences between yield and return conventions in the fixed income market
- Calculate and use duration and convexity to measure risk and actively manage fixed income portfolios
- Structure and price equity linked securities, structured debt products & other complex fixed income derivatives

Key Contents

- The Fixed Income Marketplace
 - Introduction to Fixed Income Markets
 - Overview of bond markets
 - Current trends in global issuance
 - Market participants and their roles
 - Treasury and Agency Securities
 - Types of government securities
 - Primary and secondary markets
 - Federal agency securities and GSEs
 - Repurchase agreements
- Overview of Corporate Debt Instruments
 - Short and Medium Term Instruments Including
 - Commercial paper
 - Medium-term notes
 - Primary and secondary markets
 - Investment grade and high yield bonds
 - Private placements and Rule 144A Securities
 - Coupon and principal variations
 - The Syndicated Loan Market
 - The syndicated loan process
 - Types of loans and credit facilities
 - Creating facilities to match client needs
 - The Ratings Agency Process
 - Examine distinctions between agency ratings
 - Discuss the bond rating process
 - Review the ratios and formulas Ana
 - Analyze the standard financial adjustments
 - Examine effect of bond ratings on credit spreads
- Pricing & Valuing Fixed Income Instruments
 - Bond Prices & Yields
 - Time Value of Money Fundamentals
 - Bond Pricing Using Zero-Coupon Yields
 - The Assumption of “No Arbitrage” in Modern Financial Theory
 - Yields to Maturity and Internal Rates of Return
 - Compounding Conversions
 - Total Return (Horizon Yield) Analysis
 - Understanding Yield Curves
 - Historical Patterns to Observed Yield Curves
 - Boot-Strapping Implied Zero-Coupon Rates
 - Calculating and Using Implied Forward Rates
 - Expectations Theory Versus Segmented Markets Theory
 - Bond Price Sensitivity
 - Bond Price Sensitivity To Passage of Time and Changes in Yields
 - Calculation of Macaulay, Modified, and Effective Duration Statistics
 - Calculation of Effective Convexity
 - Using Duration and Convexity to Measure Risk
 - Using Duration and Convexity as Summary Statistics for Active Management of Fixed Income Portfolios: Parallel Yield Curve Shifts, “Steeperners”, “Flatteners”, and “Butterfly” Shifts

TREASURY PRODUCTS AND PRACTICES

Learning Outcome Statements

- Be introduced to all basic treasury products such as FX, Swaps, Options
- Comprehend basic statistics & mathematics & their application in treasury business
- Learn methodologies for pricing, valuation and risk management process
- Learn the risk involved in treasury products

Key Contents

- Treasury Overview
 - Overview of the treasury
 - Treasury's Role in a bank
 - Treasury Management
 - Liquidity management
 - Important treasury functions
 - Treasury Products
- Analytical Framework for Treasury Products
 - Basic statistics
 - Data classification
 - Data analysis
 - Measuring returns
 - Normal & Log normal distribution
 - Standard normal distribution
 - Volatility
- Some Basic Concepts
 - Time value of Money
 - Simple Interest Calculations
 - Compounding and discounting
 - Present value & discount factor
 - Interest & discount rates
- Foreign Exchange Market Products
 - FX market mechanism
 - Spot Foreign Exchange Transactions
 - Direct and Indirect quotes
 - Derivative Contracts
 - Interest rate parity equation
 - Forwards and Futures Contract
 - Foreign Exchange Swaps
 - Split value date transactions
 - Deep discount instruments
- Money Market
 - Role & Nature of money markets
 - Major Money Market Instruments
 - Money Market Participants
 - Characteristics of Money Markets Instruments
 - Money Market Derivative instruments
- Capital Markets
 - Fixed Income bonds
 - Bond Price
 - Bond price dynamics
 - Price yield relationship of a bond
 - Yield to maturity
 - Time to Maturity
 - Macaulay Duration
 - Modified Duration
 - Convexity
- Forward Rate Agreement
 - FRA as Hedging and speculation tool
 - Pricing & Hedging with FRA
 - Interest rate and cross currency swaps
 - Pricing of swaps
 - Zero coupon Methodology of Swap Pricing
 - Application of Discount factors and Discount functions
 - Pricing of Cross currency Swaps
- Long-Term Currency Swaps
 - Overview of the swaps market
 - Long-dated FX contracts
 - Long-term foreign currency funding

INTEREST RATES

Learning Outcome Statements

- Identify and quantify interest rate risk
- Structure and price swaps
- Use interest rate derivatives in trading and ALM
- Implement portfolio risk management techniques
- Construct stochastic interest rate models
- Evaluate different portfolio investment strategies
- Implement VaR based portfolio risk models

Key Contents

- Interest Rate Risk Management Overview
 - Defining risk; interest rate risk overview
 - Sources of interest rate risk
 - Interest rate risk in ALM
 - Risk management frameworks
- Interest Rate Risk: Identification & Measurement
 - Maturity banding and gap analysis
 - Shortcomings of gap analysis
 - Duration (Delta) analysis
 - Convexity (Gamma) risk
 - Portfolio Approach
- Interest Rate Modeling
 - Deterministic interest rate models
 - Modeling the yield curve (bonds, swaps)
 - Bootstrapping zero coupon (spot) rates from market price/rate data
 - Calculation of implied forward rates
 - Convexity adjustment for interest rate futures
 - Interpolation: yield curve smoothing algorithms
 - Stochastic Term Structure Modeling
 - Incorporating interest rate volatility into the interest rate model
 - Building an arbitrage-free forward interest rate binomial tree
 - Modeling assumptions and variables
- Management of Interest Rate Risk – Interest Rate Futures and FRAs
 - Exchange traded derivatives
 - Margining: definition and operation
 - The mechanics of trading futures contracts
 - Contract types and specifications
- Short term interest rate futures
- Interest rate trading with futures
- Forward Rate Agreements (FRAs)
- Bond Futures
 - Operational mechanics of trading bond futures
 - Bond futures contract types and specifications
 - Cheapest to Deliver (CTD) and the value of the delivery option
 - The cash-futures (carry) basis (Gross, Net)
 - Hedging interest rate risk with bond futures
 - Calculating duration/DV01 for bond futures
 - Duration hedging with bond futures
 - Basis risks in hedging with bond futures
 - Active interest rate strategies with bond futures
 - Directional & relative value interest rate strategies
- Interest Rate Swaps
 - Swaps market quotation and conventions
 - Generic fixed vs. LIBOR swaps ('Par' swaps)
 - Overnight index (OIS) swaps
 - Basis swaps
 - Structured and off-market swaps
 - Swap pricing and valuation
- Interest Rate Risk Management with Swaps
 - Applications of interest rate swaps in ALM
 - Cash flow hedging versus fair value hedging
 - Active interest rate strategies derivatives
 - Accounting for interest rate derivatives
- Interest Rate Options: Interest Rate Caps and Floors; Swap Options
- Portfolio Interest Rate Risk Management