



**JAMNALAL BAJAJ INSTITUTE  
OF MANAGEMENT STUDIES**

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*University of Mumbai*

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*MSc Finance Course Structure and Syllabus  
(2019-21)*

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*Programme Structure and Syllabus*

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## P R E F A C E

The Syllabus Book presents the broad objectives, structure, and contents of our two-year full timeMSc Finance course, University of Mumbai. The syllabus is directional in scope and permits the much desirable flexibility to keep pace with the evergrowing body of knowledge, technology and explorations in management education with special emphasis on the finance of enterprise.

The programme is recognized by the UGC, Delhi.

JBIMS-2019

University of Mumbai

**Scheme of Assessments for courses of 4 credits (100 Marks)**

- The Semester end Examination will be conducted for 60 Marks.
- Internal Assessments will be conducted for 40 Marks.

The allocation of 40 marks shall be on the following basis: -

- a) Periodical class tests held in the given semester (20 Marks)
  
- b) Presentations throughout the semester (10 Marks)
  
- c) Attendance and Active participation in routine class instructional deliveries (05 Marks)
  
- d) Overall Conduct as a responsible student, mannerism and articulation and exhibition of leadership qualities in organizing related academic activities. (05 Marks)

Note: A Student has to separately secure minimum 50% marks (i.e 20 out of 40) in the internal assessments and secure minimum 50% marks (i.e 30 out of 60) in the Semester End Examination in every course to be declared as Pass.

## *Semester I (40 Credits)*

<b>Code Course</b>	<b>Title</b>	<b>Contact Hours</b>	<b>Credits</b>
PSFN1T01	Economics	3 per week	4
PSFN1T02	Quantitative Methods	3 per week	4
PSFN1T03	Accounting & Financial Reporting	3 per week	4
PSFN1T04	Financial Management	3 per week	4
PSFN1T05	Costing and Control system	3 per week	4
PSFN1T06	Taxation (Direct and Indirect)	3 per week	4
PSFN1P01	Practical 1: Quantitative Methods	3 per week	4
PSFN1P02	Practical 2: Accounting and Financial Reporting	3 per week	4
SP01	Business Communication Skills	3 per week	4
SP02	Business Environment	3 per week	4

# Economics

## Topics

### 1 Microeconomics

*Consumer Theory*: Choice, Preferences, Utility; Demand, Revealed Preferences, Comparative Statics; Consumer Surplus, Aggregation; Variations to the Basic Choice Model (Time, Uncertainty). *Producer Theory*: Technology, Profit Maximization, Cost Minimization; Supply, Aggregation Markets; Monopoly; Oligopoly and Game Theory; Walrasian Equilibrium. *Market Failures*: Externalities; Public Goods; Small Number of Agents, Nash Bargaining. *Asymmetric Information*: Adverse Selection, Moral Hazard, Principal-Agent Model; Auction Design; Voting and Other Applications.

### 2 Macroeconomics

An overview of the modern market economy as a system for dealing with the problem of scarcity. The analysis of relationships among such variables as national income, employment, inflation and the quantity of money.

Managing aggregate demand; fiscal policy; money and the banking system; monetary policy; the debate over monetary and fiscal policy; budget deficits in the short and long run; trade-off between inflation and unemployment.

### 4 International Economics

*Trade Theories*: Ricardian Trade Model; Modern Trade Theory; Trade and Income Distribution; Alternative Trade Theories. *Trade Policy*: Commercial Policy: Tariffs and Nontariff Trade Barriers; Political Economy of Trade Policy; Economic Integration (Free Trade Agreements); International Factor Movements and Multinational Enterprises; Balance of Payments; Foreign Exchange Market; Exchange Rate Determination; Modern Exchange Rate System and Policies.

### 5 Financial Economics

*Fundamental Theory of Finance*: Absence of Arbitrage and Efficient Markets; Existence of Positive Linear Pricing Rule; Risk Neutral (Martingale) Probabilities and State Pricing. *Preferences and Uncertainty*: Expected Utility Theory; Linear Risk Tolerance Preferences; Jensen's Inequality and Risk Aversion; Ordering Preferences by Risk Aversion; Stochastic Dominance; Insurance and Certainty Equivalence; Alternative Psychological and Behavioral Approaches.

## Required Texts

Economics by N. Gregory Mankiw and Mark P. Taylor (2006), Thompson Learning.

## Reference Text

- Intermediate Microeconomics 7e by Varian, Hal R., W.W. Norton (2005).
- Macroeconomics 6e by Abel, Bernanke, and Croushore, Prentice Hall (2007).

# Quantitative Methods

## Topics

- 1 *Review of basic probability models*; combinatorics; random variables; discrete and continuous probability distributions.
- 2 *Generating Functions*: Discrete Distributions; Branching Processes; Continuous Densities.
- 3 *Markov Chains*: Introduction; Absorbing Markov Chains; Ergodic Markov Chains; Fundamental Limit Theorem; Mean First Passage Time.
- 4 *Random Walks*: Random Walks in Euclidean Space; Gambler's Ruin; Arc Sine Laws
- 5 *Inferential Statistics*: Estimating and Confidence intervals; Hypothesis testing; Non-parametric tests.
- 6 *Financial Calculus*: Taylor series; Ordinary differential equations; Similarity solutions; Brownian motion; Stochastic differential equations; Itô's lemma; Continuous-time stochastic differential equations as discrete-time processes; Correlated random walks; Using Itô's lemma to manipulate stochastic differential equations.
- 7 *Mathematical Programming*: Linear Programming; Solving Linear Programs graphically; Simplex Method; An introduction to non-linear programming.

## Required Texts

- Probability and Random Processes by Grimmett and Stirzaker, Oxford University Press (1997).
- Time Series Analysis by J.D. Hamilton, Princeton University Press (1994).
- Quantitative Finance 2e by Paul Wilmott, John Wiley (2007)
- Mathematics for Finance by Marek Capiński and Tomasz Zastawniak, Springer (2003).

## Reference Text

Methods of Mathematical Finance by Ioannis Karatzas, Steven E. Shreve (Springer) 2011.



# Financial Accounting, Reporting & Analysis

## Topics

1. Context and Purpose of Financial Accounting: Nature of financial and managerial accounting information; accounting profession and accounting careers; accounting equation; Core financial statements.
2. The Use of Double-Entry and accounting systems: Accounts, debits and credits; The journal; The general ledger; Trial balance; Computerized processing systems; T-Accounts; Double-entry book-keeping principles including the maintenance of records and sources of information; Recording Transactions and events - Sales and purchases; cash; stock; tangible fixed assets; depreciation; intangible fixed assets and amortisation; accruals and prepayments; debtors and creditors; provisions and contingencies; capital structure and finance costs.
3. Income Measurement: Measurement transactions and events; periodicity assumption and its accounting implications; Basic elements of revenue recognition; Basic elements of expense recognition; adjusting process and related entries; Accrual versus cash-basis accounting.
4. Context and Purpose of Financial Reporting: The reasons for and objectives of financial reporting; users' and stakeholders' needs; the main elements of financial reporting.
5. The qualitative characteristics of financial information: Define, understand, and apply accounting concepts, including concept of true and fair view, going concern, accruals, consistency, materiality, relevance, reliability, substance over form, neutrality, prudence, completeness, comparability, understandability, and business entity concept.
6. Regulatory Framework of Accounting: Reasons for existence of a regulatory framework; legal provisions relating to accounting; setting Indian accounting standards, convergence of international accounting standards, International Financial Reporting Standards (IFRS).
7. Accounting Analysis: Accounting and Analysis of Asset: Historical cost and conservatism, asset reporting challenges, common misconceptions about asset accounting.
8. Accounting and Analysis of Liability and Equity: Liability definition and reporting challenges; common misconceptions about liability accounting; equity definition and reporting challenges.
9. Revenue Analysis: Revenue recognition rule, revenue recognition challenges
10. Expense Analysis: Matching and conservatism, expense reporting challenges
11. Interpretations of financial statements: Ratio analysis; cash flow analysis; funds flow analysis; value added statements; limitations of financial statements; Calculation and interpretation of accounting ratios and trends to address users' and stakeholders' needs; limitations of interpretation techniques.

### Required Texts

Financial Reporting and Analysis by Lawrence Revsine, Daniel Collins, Bruce Johnson, Fred Mittelstaedt McGraw-Hill (2011).

### Reference Text

International Financial Reporting and Analysis by Alexander, Britton, Jorissen Thomson (2007).

# Financial Management

## Topics

- 1 Introduction: Role of the corporate financial manager (CFO); corporate finance decisions; goals of firm - profit maximization v. shareholders' wealth maximization; basic responsibilities of financial managers; social responsibility of the firm; agency relationships and conflicts.
- 2 Environment of finance: Financial markets – capital markets (equity markets, debt market), money markets, foreign exchange market, and derivatives markets; term loans and leases; accounting treatment of leases; convertibles, and warrants.
- 3 Valuation Concepts: Future values and compound interest; present values; level cash flows: perpetuities and annuities; valuation of long-term securities; risk and return; measuring portfolio risk.
- 4 Financial Planning: Introduction to financial planning; financial planning models; components of a financial planning model; pitfalls in model design; role of financial planning models; external financing and growth; deferred taxes and financial analysis; sustainable growth modeling.
- 5 Working Capital Management and Short-Term Planning: Components of working capital, working capital and the cash conversion cycle, working capital trade-off; links between long-term and short-term financing; tracing changes in cash and working capital; cash budgeting, forecast sources of cash, forecast uses of cash, a short-term financing plan, options for short-term financing, evaluating the plan, sources of short-term financing; cash management, management of account receivables.
- 6 Investment in Capital Assets: Capital budgeting and estimating cash flows; capital budgeting techniques; multiple internal rates of return; replacement chain analysis; risk and managerial options in capital budgeting.
- 7 Cost of Capital, Capital Structure, and Dividend Policy: Required returns and the cost of capital; operating and financial leverage; capital structure determination; theories of capital structure; dividend policy; theories of relevance and irrelevance of dividend policy.

### Required Text

Fundamentals of Financial Management by Eugene F. Brigham, Joel F. Houston (2011), South Western (Cengage Learning)

### Reference Text

Fundamentals of Financial Management by James C. Van Horne, John M. Wachowicz (2008), Prentice Hall.

# Costing and Control System

## Topics

1. Preparation of Cost sheet
2. Method of Costing
3. Process Costing
4. Absorption Costing, Marginal Costing, Cost Volume Profit Analysis and Decision Making
5. Relevant Cost and Differential Cost
6. Budgetary Controls
7. Standard Costing
8. Inventory Management and Cost Audit (An Overview)
9. Activity Based Costing
10. Application of Costing concepts in the Service and Trading Sector

### Reference Text:

- **Horngren's Accounting** (12e) by Tracie L. Miller-Nobles, Brenda L. Mattison, Ella Mae Matsumura (2017). New Delhi: Pearson (India) Limited.
- Management Accounting for profit control by Keller & Ferrara
- Cost Accounting for Managerial Emphasis by Horngreen
- T. P. Ghosh: Financial Accounting for managers(Taxmann).

# Taxation (Direct and Indirect)

## Topics

### 1. Direct Tax

- Income Tax Act and rules
- Computation of Total Income and Determination of Tax Liability – individuals and Companies

### 2. Indirect Taxes

- Central Excise and CENVAT
- Customs Duty
- Service Tax
- Central Sales Tax and VAT
- Maharashtra Value Added Tax
- Primer on GST

Reference Text:

Taxation Growth and Fiscal Institutions by Albert Lee

# Practical 1: Quantitative Methods

The application of the following topics to real world issues in Finance:

- 1      *Generating Functions*: Discrete Distributions; Branching Processes; Continuous Densities.
- 2      *Markov Chains*: Introduction; Absorbing Markov Chains; Ergodic Markov Chains; Fundamental Limit Theorem; Mean First Passage Time.
- 3      *Random Walks*: Random Walks in Euclidean Space; Gambler's Ruin; Arc Sine Laws
- 4      *Inferential Statistics*: Estimating and Confidence intervals; Hypothesis testing; Non-parametric tests.
- 5      *Financial Calculus*: Taylor series; Ordinary differential equations; Similarity solutions; Brownian motion; Stochastic differential equations; Itô's lemma; Continuous-time stochastic differential equations as discrete-time processes; Correlated random walks; Using Itô's lemma to manipulate stochastic differential equations.
- 6      *Mathematical Programming*: Linear Programming; Solving Linear Programs graphically; Simplex Method; An introduction to non-linear programming.

Assessment:

Final submission of practical report followed by viva: 60 marks | Internal assessment: 40 marks

# Practical 2:

## Financial Accounting, Reporting and Analysis

- 1 Analysis of an annual report of a listed company.
- 2 Analysis of a prospectus issued by a company launching an initial public offering (IPO)
- 3 Analysis of an industry report prepared by a major brokerage house.

Assessment:

Final submission of practical report followed by viva: 60 marks | Internal assessment: 40 marks

# Business Environment

(Seminar Paper- 4 credits)

**This seminar based paper intends to integrate the various factors and issues that have implications for business sector. The course will address broadly the following topics:**

- Introduction to Business Environment: Concept & Significance, Elements of Environment- Internal & External, Changing Dimensions of Business environment
- How social, political, economic and institutional factors define the business environment of countries
- Role of Government and Legal Environment in Business
- Government Policies: Fiscal and Monetary Policy
- The Money Market & the Role of Central Banking How does Commercial Banking Effect Industry & Business
- The role played by diverse stakeholders
- Company strategies for addressing opportunities and challenges in complex environments
- The Role and aspect of technological environment
- Domestic Political and Global political environment affecting business
- Foreign Trade Policies- Impact of Rupee Devaluation
- How companies' strategies are affected by the environment- SWOT Analysis, PEST Analysis, Horizontal and Vertical Integration Strategy Porter's Five Forces Analysis
- Doing Business In India- Make in India v/s Make for India.

## **Pedagogy:**

The course is built around conceptual rigor, international best practices and, most importantly, Indian case situations. Lecture and case based.

## **Assessment:**

**Continuous evaluation based on presentation, test, quizzes: 60 marks**

**Submission of research paper: 40 marks**

**Business Communication Skills**  
**(Seminar Paper- 4 credits)**

1. Introduction to business or managerial communication
2. Principles of nonverbal communication through clothes and body language
3. Types of managerial speeches
  - speech of introduction
  - speech of thanks
  - occasional speech
  - theme speech
4. Mastering the art of giving interviews in
  - selection or placement interviews
  - discipline interviews
  - appraisal interviews
  - exit interviews
5. Group communication by way of
  - Meetings
  - group discussions
6. Introduction to business writing
7. Business letters
  - routine letters
  - bad news and persuading letters
  - sales letters
  - collection letters
  - job application letters
8. Internal communication through
  - memos, minutes, notices
  - reports
9. Principles governing the use of audiovisual media
10. Principles of Effective Presentations
11. Business and social etiquette
12. Email etiquettes
13. Workshop on Personal Interview

**Assessment:**

**Continuous evaluation based on presentation, test, quizzes: 60 marks**

**Submission of research paper: 40 marks**



## *Semester II (40 Credits)*

<b>Code Course</b>	<b>Title</b>	<b>Contact Hours</b>	<b>Credits</b>
PSFN2T07	Corporate Governance & Regulatory Environment	3 per week	4
PSFN2T08	Corporate Finance	3 per week	4
PSFN2T09	Econometrics and Financial Modelling	3 per week	4
PSFN2T10	Financial Markets and Institutions	3 per week	4
PSFN2T11	Fixed Income Securities	3 per week	4
PSFN2T12	Investment Banking	3 per week	4
PSFN2P03	Practical 3: Econometrics and Financial Modelling	3 per week	4
PSFN2P04	Practical 4: Fixed Income Securities	3 per week	4
SP03	<b>Trust and Ethics in Finance</b>	3 per week	4
SP04	Marketing of Financial products and services	3 per week	4

# Corporate Governance and Regulatory Environment of Finance

## Topics

- 1 Corporate Governance: Objectives; definitions and importance of corporate governance; reputation, competition and corporate governance; corporate ethics; corporate governance and corporate responsibility; globalization and corporate governance; Models of corporate governance; mechanisms of corporate governance.
- 2 Shareholders and Stakeholders: Shareholder rights; equitable treatment; responsibilities of shareholders; minority shareholders' protection; stakeholder protection.
- 3 Board of Directors: Structure and independence of the board; responsibilities and duties of the board; selection, remuneration and evaluation of the board; board committees; the board and the management.
- 4 Audit Committee: Organization of audit committee; responsibilities of the audit committee; working with auditors and management.
- 5 Code of Corporate Governance: SEBI Code of Corporate Governance (Narayanmurthy Committee Report); Ministry of Finance (Nareshchandra Committee Report); US Sarbanes-Oxley Act of 2002; The UK Corporate Responsibility Act 2002.
- 6 Economic Rationale of Financial Regulation: Externalities; market imperfections and failures; economies of scale in monitoring; moral hazard; mandatory versus voluntary disclosure; regulation and competition; alternative approaches to regulation.
- 7 Legal Framework of Capital Markets: Securities Contracts (Regulation) Act, 1956, and Securities Contracts (Regulation) Rules, 1957; Foreign Exchange Management Act (FEMA); Overview of relevant provisions of the Companies Act, 1956, Indian Stamp Act, Registration Act, Competition Act; , Stock exchanges – trading rules, listing agreement, enforcement of listing compliances; Banking Regulation Act; Reserve Bank (Board for Financial Supervision (BFS)) Regulations.
- 8 SEBI Regulations and Guidelines: SEBI Act, 1992; SEBI (ICDR) Regulations; SEBI (Insider Trading) Regulations; SEBI (Substantial Acquisition of Shares and Take Over) Regulations; SEBI (Buyback of Securities) Regulations; SEBI (Foreign Institutional Investors) Regulations.
- 9 Regulation of Mutual Funds: SEBI (Mutual Funds) Regulations; taxation of a mutual fund - resident unit holders, non-resident individual unit holders, non-resident unit holders being a company; Regulation of Overseas Investment in the Domestic Mutual Fund Sector - Setting up an AMC, Investing via a Domestic Mutual Fund, Investing as a FII in an Indian mutual fund, role of self-regulatory organisations.
- 10 Overview of Regulatory Bodies: Reserve Bank of India, Securities Exchange Board of India, Forward Market Commission, Insurance Regulatory Development Authority, Provident Fund Regulatory and Development Authority, Ministry of Finance, Ministry of Corporate Affairs, Registrar of Companies.
- 11 International Financial Regulation: Challenges of international regulation of financial markets; overview of financial regulation in USA, UK, EU.

## Required Text

- Corporate Governance by Robert A. G. Monks and Nell Minow (2011), Wiley.
- Company Law: Theory, Structure, & Operation by Cheffins (1997), Clarendon Press.
- Global financial regulation by Howard Davies, David Green (2008) Polity Press.

## Reference Text

- Sebi Manual 16e Taxmann Publications Pvt. Ltd, 2011
- Foreign Exchange Management Manual Taxmann Publications Pvt. Ltd, 2011

# Corporate Finance

## Topics

- 1 Framework for Financial Decisions: An overview of financial decisions; the financial environment; bond and share valuation.
- 2 Investment Decisions and Strategies: Investment appraisal methods; project appraisal – applications; investment strategy and process.
- 3 Value, Risk and the Required Return: Analysing investment risk; identifying and valuing options; relationships between investments: portfolio theory; setting the risk premium: the capital asset pricing model; the required rate of return on investment; enterprise value and equity value.
- 4 Valuation: Conceptual framework of valuation; approaches and methods of valuation - asset-based approach, earnings based approach, discounted cash flow approach, market value based approach, relative valuation approach, real options approach, selection of approach; applications of valuation methods to valuation of different types of companies.
- 5 Short-Term Financing and Policies: Treasury management and working capital policy; short-term asset management; short - and medium-term finance;
- 6 Strategic financial decisions: Long-term finance; returning value to shareholders: the dividend decision; capital structure and the required return; relevance of capital structure; acquisitions and restructuring; Operating Leverage; Dividend Policy; Pricing Strategy; Asset-Liability Management.
- 7 Corporate Performance Management: Execution Problem; Balanced Scorecard; Real-time Financial Systems: Corporate Performance Management (CPM); Integrated Financial Management
- 8 International Financial Management: Overview of market for foreign currencies; foreign exchange risks – transaction, translation, and economic risks; managing currency risk; foreign investment decisions.

## Required Text

Corporate Finance by Stephen A. Ross, Randolph Westerfield, Jeffrey Jaffe (2006), McGraw-Hill/Irwin.

## Reference Text

Corporate Finance: Linking Theory to What Companies Do by John Graham, Scott B. Smart, William L. Megginson (2008), South Western Cengage Learning.

# Econometrics & Financial Modelling

## Topics

### A. Econometrics

1. Introduction to econometrics
2. Univariate regression model
3. Multivariate regression model
4. Use of Dummy variables
5. Relaxation of assumptions of CLRM: multicollinearity, heteroskedasticity, autocorrelation and endogeneity
6. Time series data analysis and Times series econometric forecasting models
7. Panel data analysis: Simultaneous use of cross sectional and time series data

### B. Financial Modelling

- 1 Preliminaries: Introduction financial modelling; objectives of financial modelling; spreadsheet features, techniques; best practices in spreadsheet design.
- 2 Systematic Design Method: Model Design and structure; Building business case models; spreadsheet techniques and methods.
- 3 Auditing and Testing: Essential testing and auditing techniques; Testing financial analysis model with cash flows and ratios; Debugging and checking a financial model.
- 4 Macros and Security: Writing and auditing and macros; Spreadsheet security.
- 5 Forecasting Models: Review of forecasting methods; financial "drivers"; Adding forecasts to the case models.
- 6 Risk Techniques: Risk and multiple answers; Scenario techniques; Advanced financial functions; adding sensitivity to the case model; Advanced scenario methods; Composite methods.
- 7 Optimisation and Targeting: Overview of optimisation and targeting; Goal seek and Solver methods; optimising the case model.
- 8 Management Reporting: Requirement to consolidate and summarise data; consolidating data from different sources; spreadsheet report managers; pivot tables; Techniques for summarising data; producing a management analysis.
- 9 Model Completion: Model review; Documentation; Final audit.

### Reference Text:

- Introductory Econometrics 4e by Wooldridge, J. South-Western Cengage Learning (2009).
- Financial Modeling 3e by S Benninga, MIT Press (2008).

# Financial Markets and Institutions

## Topics

- 1 Introduction: Determination of Interest Rates; Interest Rates and Security Valuation; Monetary Policy, and Interest Rates.
- 2 Securities Markets: Money Markets; Bond Markets; Mortgage Markets; Stock Markets; Foreign Exchange Markets; Derivative Securities Markets.
- 3 Banks: Industry Overview; commercial banks, cooperative banks; microfinance institutions; Banks' Financial Statements and Analysis; Regulation of banks.
- 4 Nonbank Financial Institutions: Lending Institutions; Finance Companies; NBFCs; Insurance Companies; depositories and depository participants, clearing corporations, Brokerage Firms; Merchant and Investment Banks; Mutual Funds and Hedge Funds; Pension Funds; registrars and transfer agents, credit rating agencies, portfolio management services, asset reconstruction companies; money market institutions – primary dealers, DFHI, CCIL, FIMMDA; insurance institutions – life insurance companies, non-life insurance companies, actuaries.
- 5 Regulatory bodies – Self Regulatory Organisation (SROs), SEBI, RBI, IRDA. International financial institutions – Federal Reserve Bank (US); Bank of England; European Central Bank; Securities Exchange Commission (SEC).
- 6 Risk Management In Financial Institutions: Types of Risks Incurred by Financial Institutions; Managing Credit Risk on the Balance Sheet; Managing Liquidity Risk on the Balance Sheet; Managing Interest Rate Risk and Insolvency Risk on the Balance Sheet; Managing Risk off the Balance Sheet with Derivative Securities; Managing Risk off the Balance Sheet with Loan Sales and Securitization.

## Required Text

Financial Markets and Institutions by Bhole, Tata McGraw-Hill (2009).

## Reference Text

Financial Markets and Institutions 4/e by Saunders and Cornett, McGraw-Hill (2009).

# Fixed Income Securities Market

## 1 Understanding Forward Rate Analysis and Yield curves

Term structure of interest rates and forward rate analysis; yield measures; analysing changes in the yield curve.

## 2 Framework for Analysing Bonds

Cash flows for typical bond structures; time value of money; annuities; bond yields: coupon, current, yield to maturity (YTM), yield to call, realised yield; yield conventions; yield decomposition: current yield, interest upon interest, pull-to-maturity; duration; modified duration; convexity and relative convexity. yield curve analysis - coupon yield curve and the spot curve, interpretations of the yield curve, pricing bonds using the yield curve; implications of duration and convexity for bond analysis; using horizon analysis to evaluate bond strategies; analysis of bonds with embedded options; asset and mortgage backed security analysis.

## 3 Risk Analysis for Bonds

Sources of risk - credit risk; interest rate risks; reinvestment risks; liquidity; calls on bonds; analysis of corporate bond risk; analysing rating agencies criteria – Moodys, Standard and Poors; risks involved in treasury securities; price volatility and interest rate volatility; sources of interest rate volatility; key ratios for interest rate sensitivity.

## 4 Fixed Income Strategies

Passive fixed income strategies; active fixed income strategies; common strategies - buy and hold, bullets and barbells, butterflies, ladders, immunization, hedging.

## 5 Fixed Income Fund Management Practice

Constructing a fixed income portfolio, importance of asset allocation, funding liabilities, asset liability management (ALM), balanced fund approach.

### Required Texts

- Fixed Income Securities: Tools for Today's Markets, 2nd ed. by Bruce Tuckman, Wiley.
- Understanding and Managing Interest Rate Risks, by Ren-Raw Chen, World Scientific.
- Options, Futures, and Other Derivatives 6e by John C. Hull, Pearson/Prentice Hall.

### Reference Texts

- Credit Derivatives, by M. Ansen, F. Fabozzi, M. Choudhry, and R.-R. Chen, Wiley.



## Topics

### **A: Investment Banking**

- **Introduction: Overview of Investment Banking**

Corporate debt and underwriting procedures securitization and asset backed debt securities, high yield debt investment bankers as traders and market-makers, private placements

- **Investment Process**

Methods - Sources of funding/investor decision making – Credit borrowing Vs Issuing Equity - Analysis of funding options: bank borrowing, cross currency, private placements, private equity, public stock/bond market, high yield market, floating rate vs. fixed rate borrowing, equity vs. convertible securities Disinvestments mechanism — Incentives — Future Prospects

- **Mergers & Acquisitions**

Introduction to valuation of companies; the law of mergers & acquisitions, markets for takeover stocks and risk arbitrageurs restructuring; theory of adding value, LBOS, practice of adding value

- **How Investment Bankers Compete**

Developing new business, international business, professional standards and management ,Structure of banking industry, major developments in India, and in international capital markets 1975-1997: legal basis of corporate finance and investment banking.

### **B: Private Equity and Venture Capital (PEVC)**

- Private equity and venture capital in the financial system:
- The special role of private equity and venture capital industry: why are they necessary in a modern economy?
- Market trends in Europe and in US.
- Competitive models of private equity and venture capital: angels and informal investors; incubators; start-up financier; closed-end funds; merchant banks; vulture funds.
- Regulatory and legal issues:
- Regulations and supervision towards investing in non-financial firms.
- The functioning of private equity fund: management fee and carried interest; managers and investors.
- Legal and fiscal issues for venture capital investment schemes: European versus US and UK patterns (closed-end fund, venture capital fund, Sbic, VCT, angel investing).
- Management of a private equity and a venture capital fund:
- Introduction to different categories of investment: new ventures, start up, young firms, high potential firms, family owned firms and turnaround involved companies.
- The value chain of investing in firms: a broad vision.
- The valuation of the target company: how to evaluate and how to manage the deal?
- Management issues: managing the single investment, funding process, managing the portfolio of investments, exit way process

Reference Text:



# Practicals 3: Econometrics and Financial Modeling

The application of the following topics to real world issues in Finance:

## 1 A Econometrics

- 1 Univariate regression model.
- 3 Multivariate regression model.
- 4 Dummy variables, heteroskedasticity, endogeneity.
- 5 Time series data analysis
- 6 Times series regression model
- 7 Panel data analysis: Simultaneous use of cross sectional and time series data
- 8 Endogeneity: Instrumental variables and simultaneous equations.

## B Financial Modelling

- 1 Forecasting Models: Review of forecasting methods; financial "drivers"; Adding forecasts to the case models.
- 2 Risk Techniques: Risk and multiple answers; Scenario techniques; Advanced financial functions; adding sensitivity to the case model; Advanced scenario methods; Composite methods.
- 3 Optimisation and Targeting: Overview of optimisation and targeting; Goal seek and Solver methods; optimising the case model.
- 4 Management Reporting: Requirement to consolidate and summarise data; consolidating data from different sources; spreadsheet report managers; pivot tables; Techniques for summarising data; producing a management analysis.

Assessment:

Final submission of practical report followed by viva or test: 60 marks | Internal assessment: 40 marks

# Practical 4: Fixed Income Securities Analysis

Application of the following topics for solving real world problems in the area of fixed income securities market:

## 1 Analysing Bonds

Cash flows for typical bond structures; time value of money; annuities; bond yields: coupon, current, yield to maturity (YTM), yield to call, realised yield; yield conventions; yield decomposition: current yield, interest upon interest, pull-to-maturity; duration; modified duration; convexity and relative convexity. yield curve analysis - coupon yield curve and the spot curve, interpretations of the yield curve, pricing bonds using the yield curve; implications of duration and convexity for bond analysis; using horizon analysis to evaluate bond strategies; analysis of bonds with embedded options; asset and mortgage backed security analysis.

## 2 Risk Analysis for Bonds

Sources of risk - credit risk; interest rate risks; reinvestment risks; liquidity; calls on bonds; analysis of corporate bond risk; analysing rating agencies criteria – Moodys, Standard and Poors; risks involved in treasury securities; price volatility and interest rate volatility; sources of interest rate volatility; key ratios for interest rate sensitivity.

## 3 Fixed Income Strategies

Passive fixed income strategies; active fixed income strategies; common strategies - buy and hold, bullets and barbells, butterflies, ladders, immunization, hedging.

## 4 Fixed Income Fund Management Practice

Constructing a fixed income portfolio, importance of asset allocation, funding liabilities, asset liability management (ALM), balanced fund approach.

Assessment:

Final submission of practical report followed by viva: 60 marks | Internal assessment: 40 marks

Semester II SP-03

## Marketing for Financial Products and Services (Seminar paper)

### Topics

1. Introduction and marketing strategy

Introduction - The role of marketing in modern financial services organizations.

Marketing Strategy - The structure of marketing strategies and relationship to corporate strategy.

2. Marketing Strategy - Marketing audit – the 5Cs framework.

Marketing Research – the Process for Gathering Marketing Intelligence

3. Understanding Customers - Consumer Buying Behaviour and Business Buying Behaviour.

4. Value Creation and Positioning - Segmentation, Targeting and Positioning in Financial products and Services.

5. Value Creation and Positioning - Developing Financial Products and Managing Brands

6. Value Creation and Positioning - Pricing Strategies

7 Value Creation and Positioning – Direct and Digital Marketing

#### **Assessment:**

**Continuous evaluation based on presentation, test, quizzes: 60 marks**

**Submission of research paper: 40 marks**

#### **Reference Text:**

Armstrong, Adam, Denize & Kotler, 2015, *Principles of Marketing, 6th edition*, Pearson Australia, Melbourne.

Hooman Estelami, 2012, *Marketing Financial Services: Second Edition*, Dog Ear Publishing, LLC, ISBN: 978-145750-774-8

## **Trust and Ethics in Finance (Seminar Paper)**

### **Topics**

1. Introduction: Why human beings are ethical, why they are not
2. Ethics: A Diet for Highly Leveraged Financial Markets
3. Ethical Cash Management? A Possible Solution
4. Ethics or Bust : Beyond Compliance and Good Marketing
5. Ethics: The Key to Credibility
6. The Financial Sector and the Behaviour of People
7. Ethics: Essential Prerequisite of the Financial System
8. The Reconciliation of Finance and Ethics: Integrating the Interior and Exterior Dimensions of Reality
9. Microfinance: Getting Money to the Poor or Making Money out of the Poor?

### **Assessment:**

**Continuous evaluation based on presentation, test, quizzes: 60 marks**

**Submission of research paper: 40 marks**

## *Semester III (40 Credits)*

<b>Code Course</b>	<b>Title</b>	<b>Contact Hours</b>	<b>Credits</b>
PSFN3T13	Technical Analysis	3 per week	4
PSFN3T14	Portfolio Analysis and Management	3 per week	4
PSFN3T15	Derivatives	3 per week	4
PSFN3T16	Mergers, Acquisitions and Corporate Restructuring	3 per week	4
PSFN3T17	Risk in Financial Services	3 per week	4
PSFN3P05	Practical 5: Technical Analysis	3 per week	4
PSFN3P06	Practical 6: Portfolio Analysis and Management	3 per week	4
SP05	Algorithmic Trading strategies	3 per week	4
SP06	Entrepreneurial Finance	3 per week	4
PSFN3P07	Summer Project	NA	4

# Technical Analysis

## Topics

### 1 Background and Basics

Technical analysis as an integral part of market analysis; History of technical analysis.

### 2 Constructing and Interpreting Charts

Tools - the construction of different types of charts - line chart, bar chart, point and figure chart, candlestick charts etc.; What to Look for on the Charts.

### 3 Trends

Basics of pattern recognition; determination of price trends; support and resistance levels; real time presentations at end of session; moving averages; gaps; volume; comparative relative strength.

### 4 Phases of Price Activity and Pattern Recognition

Phases of price activity - pattern recognition on bar charts, pattern recognition on point and figure charts, pattern recognition on candlestick charting; turning points; continuation patterns; climax; candlesticks; volume; point and figure; behavioral; pairs trading / derivatives.

### 5 Technical Analysis Theories

Dow theory, Elliott wave theory, Fibonacci sequence, Gann analysis, Cycle analysis.

### 6 Technical Indicators

RSI indicator; Stochastics; Rate of change (RoC) indicator; MACD; Bollinger bands; Moving averages.

### 7 Sentimental Indicators

Volatility index (VIX), Put/call ratio, Bull/bear indicators, Dow's psychology of bull and bear markets, Insider activity

### 8 Applying technical analysis to bonds, currencies, futures and options.

### 9 Technical Analysis and Portfolio Management

Technical analysis tools for sentiment; Efficient market considerations; Short versus long trading strategies; Risk tools; Advanced derivative use and technical analysis; Quant tools.

## Reference Text:

Technical Analysis: The Complete Resource for Financial Market Technicians by Charles D. Kirkpatrick, Julie R. Dahlquist (2011), Pearson Education.

# Portfolio Analysis and Management

## Topics

### 1 Efficient Market Hypothesis (EMH)

Efficient market hypothesis conceptual underpinnings; empirical studies and anomalies of efficiency; implications of the EMH for investment analysis.

### 2 Modern Portfolio Theory

Measures of uncertainty and risk; Markowitz (Mean Variance) Efficient Frontier; introduction of a risk free asset; Capital Asset Pricing Model – CAPM; Critique of CAPM; arbitrage pricing theory – APT; single index models for portfolio construction.

### 3 Investment policy and portfolio creation

A framework for investment policy; investment policies and practices for institutions and individuals; monitoring and re-balancing asset allocation with respect to risk, return and investment policy; case studies in investment management; investment strategies - passive to active; structuring an international investment strategy.

### 4 Performance Attribution Analysis

Evaluation of portfolio performance; traditional measures – Sharpe, Treynor, Jensen; decomposition of portfolio performance; cases in portfolio decomposition; performance attribution support systems; value at risk (VaR) measurement.

### 5 Measurement and Presentation of Portfolio Returns

Global investment performance standards.

### 6 Stock Market Indices

Types of indices; Index versions; free-float indices; Weighting, capitalisation-weighted index; Criticism of capitalization-weighting; Indices and passive investment management. Applications - overview of NSE and BSE indices.

## Required Texts

Modern Portfolio Theory and Investment Analysis by Edwin J. Elton, Martin J. Gruber, Stephen J. Brown, William N. Goetzmann (2010), John Wiley and Sons.

## Reference Text

Quantitative Methods for Portfolio Analysis by Takeaki Kariya (1993), Kluwer Academic Publishers.

# Derivatives

## Topics

- 1 Evolution of Derivatives: Concept of derivatives, definitions, purposes and criticisms; derivative markets; past and present; difference between exchange traded and OTC derivatives; derivative market participants - hedgers, arbitrageurs and speculators.
- 2 Forward Market and Products: Structure and role of global forward market; concept, characteristics and definition; types of forward contracts - equity forward, currency forward, interest rate forward, forward rate agreement; valuation of forward; generic valuation principles; valuation of individual product; hedging using forwards; credit risk and forward contracts.
- 3 Futures Market and Products: Structure and role of global future market including leading futures exchanges; concept, characteristics and definition; trading mechanism and concept of margins; futures vs. forward; types of futures contracts - stock futures, index futures, currency futures, interest rate futures, commodity futures; generic valuation principles; valuation of individual futures product; basis risk; daily and final settlement price; hedging using futures; speculation using futures.
- 4 Option Market and Products: Structure and role of global option market including OTC and leading; options exchanges; concept, characteristics and definition; option terminology; American style and European style option; option payoffs; trading mechanism and concept of margins; futures vs options; types of options - stock options, index options, currency options, commodity options, options on futures, interest rate options;
- 5 Option Pricing: Factors affecting option pricing, upper and lower bounds of option prices, binomial model, Black and Scholes option pricing model, option Greeks (delta, gamma, theta, vega, rho), delta hedging; option strategies (spreads, straddles and strangles); exotic options - hedging with exotic options, pricing of exotic options.
- 6 Swaps: Concept, characteristics and definition, Types of swaps, Interest rate swap (IRS), Currency swap, Equity swap, Other types of swaps, valuation of swaps, Swaption, credit risk and swaps, strategies and applications of swaps.
- 7 Credit Derivatives: Concept role and structure of credit derivatives, Types of credit derivative, credit default swap, total return swap, credit spread option, Credit link notes, collateralized debt obligations.
- 8 Accounting and taxation of derivative instruments.

## Reference Text

Derivatives: Valuation and Risk Management by David A. Dufresne and Thomas W. Miller (2002), Oxford University Press.



# Mergers, Acquisitions and Corporate Restructuring

## Topics

### 1 Strategies for Value Creation

M&A as a tool of competitive advantage. Performance of M&A: why do acquisitions fail? Strategic, financial and managerial drivers of M&A activity. Reasons for M&A and its influence on shareholder value. Types of corporate control strategies. Major forces driving domestic and international M&A activity. Major players on the M&A landscape and their incentives. Analysis of successful and failed M&As. Likely future of M&A activity.

### 2 Stages of an M&A Transaction.

Overview of the stages of an M&A transaction, from origination to closing. Origination of M&A ideas, clarifying strategy, valuing the target, carrying out due diligence assessment and developing an implementation plan. Process timeline for an M&A transaction. Role of synergies in M&A analysis. Performance of pro forma “merger consequences” analysis. Tactical considerations before approaching a potential target.

### 3 Mechanics of M&A

Setting up an M&A function; Aligning M&A with business strategy; Active deal generation; Other sources of deals; Typical deal stages; Deal documentation; Valuations and deal returns; Due Diligence; Post acquisition integration.

### 4 Valuation for Mergers and Acquisition

Valuation techniques appropriate to M&A analysis. Valuing synergies. Control and liquidity discount/premium. Pricing acquisitions. Meeting the challenges of sum of the parts valuation. Estimating the cost of capital for business units. Estimating the business unit cost of capital. Peer group analysis and benchmarking. Applying peer group analysis. Valuing the business units. Estimating a target capital structure<sup>2</sup> Valuation for mergers and acquisitions.

### 5 Financial Strategy

The M&A as an effective corporate finance strategy. Build or buy decisions: striking the right balance. Leveraging financial assets through an M&A. Preparing the stage for a successful acquisition. Financial and non-financial criteria for acquisitions. Pitfalls and rebalancing the risk reward ratio. Cost reducing and revenue enhancing synergies. Purchasers motivated by diversification. The approach and requirements of financial purchasers. Valuing a consideration other than cash

### 6 Legal aspects of M&A

- *Company Law Provisions*: Statutory framework for compromises, arrangements and amalgamations. Drafting of the scheme. Approval of the scheme by members and creditors.

Court's sanction of the scheme. Legal aspects of valuation of shares and share-exchange ratios. Issue and allotment of shares. Standard time-schedule for procedural formalities of completing an M&A transaction. Takeover by acquisition of shares.

- *SEBI (Substantial Acquisition of Shares & Takeover Code) Provisions*: Overview of the SEBI (Substantial Acquisition of Shares & Takeover Code). Takeover of an unlisted company by acquiring controlling interest. Takeover of a listed company. Procedural formalities.
- *Competition Law Provisions*. Overview of the Competition Act, 2002. Anticompetitive agreements. Abuse of dominance. Meaning and definition of combinations. Concept of void combinations and exceptions. Market dominance of a group in and outside India. Concept of control of affairs or management. Overview of the role, powers and functions of the Competition Commission of India.
- *FEMA Provisions Relating To Cross-Border M&A*: Overview of provisions of the Foreign Exchange Management Act, 1999 relating to issue and transfer of securities between residents and non-residents, external commercial borrowings, American depository receipts, overseas investment by Indian companies, foreign direct investments, and wholly-owned subsidiaries of Indian companies abroad.

## 7 Accounting for M&A

Overview of Accounting Standard 14 and international accounting standards relating to M&A. Equity method of accounting for investments. Accounting for minority interest. Treatment of minority interest for enterprise valuation. Accounting for ESOPs, restructuring charges, discontinuance of operations. Recognizing asset impairments.

## 8 Tax Aspects OF M&A

Tax aspects of choice of entity. Definition of amalgamation under Income Tax Act, 1962. Amortization of certain preliminary expenses. Tax treatment of expenditure of amalgamation, purchase of patents, copyrights, scientific research. Cost of assets acquired through M&A. Capital gains on assets transferred in M&A. Carry forward and set off of accumulated losses and unabsorbed depreciation. Deferred income taxes and reporting of income tax. Tax issue in structuring debt financing. Estimating the tax bases of target company's assets. Tax effects of ESOPs.

## 9 Developing the Acquisition Integration Framework

Prioritizing integration issues and ensuring buy-in by both organizations. Integrating organizations and major projects. The integration framework and its elements, and how its use will benefit you. Facilitating individual and small task group working relationships. Identifying the connections between each element and acquisition strategic intent. Achieving common focus by reaching agreement on the details of each element.

## Reference Text

Mergers, Acquisitions, and Other Restructuring Activities by Donald M. DePamphilis (2010) Academic Press

## Risk in Financial Services

### Topics

- Principles of Risk Management
- International Risk Regulation
- Operational Risk
- Credit Risk
- Market Risk
- Investment Risk
- Liquidity Risk
- Model Risk
- Risk Oversight and Corporate Governance
- Enterprise Risk Management (ERM)

The course content is based on Chartered Institute for Securities & Investment's Risk in Financial Services certificate program. The detailed syllabus can also be viewed on [www.cisi.org](http://www.cisi.org).

### **Reference Text:**

Certificate in Risk in Financial Services, Risk in Financial Services, learning Manual, Edition 7, May 2018

# Practical 5: Technical Analysis

Application of the following topics for solving real world problems in the area of technical analysis:

- 1 Constructing and Interpreting Charts: Tools - the construction of different types of charts - line chart, bar chart, point and figure chart, candlestick charts etc.; What to Look for on the Charts.
- 2 Trends: Basics of pattern recognition; determination of price trends; support and resistance levels; real time presentations at end of session; moving averages; gaps; volume; comparative relative strength.
- 3 Phases of Price Activity and Pattern Recognition: Phases of price activity - pattern recognition on bar charts, pattern recognition on point and figure charts, pattern recognition on candlestick charting; turning points; continuation patterns; climax; candlesticks; volume; point and figure; behavioral; pairs trading / derivatives.
- 4 Technical Analysis Theories: Dow theory, Elliott wave theory, Fibonacci sequence, Gann analysis, Cycle analysis.
- 5 Technical Indicators: RSI indicator; Stochastics; Rate of change (RoC) indicator; MACD; Bollinger bands; Moving averages.
- 6 Sentimental Indicators: Volatility index (VIX), Put/call ratio, Bull/bear indicators, Dow's psychology of bull and bear markets, Insider activity
- 7 Applying technical analysis to bonds, currencies, futures and options.

Assessment:

Final submission of practical report followed by viva: 60 marks | Internal assessment: 40 marks

# Practical 6: Portfolio Analysis

Application of the following topics for solving real world problems in the area of portfolio analysis:

- 1 Efficient Market Hypothesis (EMH)
- 2 Modern Portfolio Theory
- 3 Investment policy and portfolio creation
- 4 Performance Attribution Analysis
- 5 Measurement and Presentation of Portfolio Returns
- 6 Stock Market Indices

Assessment:

Final submission of practical report followed by viva: 60 marks | Internal assessment: 40 marks

## Algorithmic Trading Strategies (Seminar paper)

It discusses various aspects of algorithmic trading like Market Structures, Algorithmic Trading trends and their impact on the markets, Types of Algorithmic Trading Strategies, Lifecycle of Algorithmic Trading, Algorithm Trading Mechanics, Latency Considerations, Ideation and Strategy Creation, Pseudo-Code Generation, Architecture of a back-testing System, Performance Measurement Statistics, Order Management, Optimizing a back-tester, Architectural design, Basic platform design and architectural setup, Operational considerations and pitfalls, Transaction Cost Analysis, Order Management, Portfolio Management, Risk Management and Error Handling.

### **Assessment:**

**Continuous evaluation based on presentation, test, quizzes: 60 marks**

**Submission of research paper: 40 marks**

## Entrepreneurship (Seminar paper)

1. Introduction to Entrepreneurship
2. Recognizing New Venture Opportunities
3. Assessing New Venture Opportunities
4. Designing the Business Model for Competitive Advantage
5. The Entrepreneurial Process: Lean Entrepreneurship
6. Entrepreneurial Finance
7. Entrepreneurial Marketing
8. Legal Issues in Entrepreneurship

### ReferenceText:

**Enterprise: Entrepreneurship and Innovation Concepts, Contexts and Commercialization** by Robin Lowe and Sue Marriott. Butterworth-Heinemann(2006).

### Assessment:

**Continuous evaluation based on presentation, test, quizzes: 60 marks**

**Submission of research paper: 40 marks**

## Summer Project (4 credits)

Summer project based on their work during internship in companies need to submit.



## *Semester IV(40 Credits)*

<b>Code Course</b>	<b>Title</b>	<b>Code Course</b>	<b>Title</b>
PSFN4T18	Structured Finance	3 per week	4
PSFN4T19	International Finance	3 per week	4
PSFN4T20	Infrastructure and Project Financing	3 per week	4
PSFN4T21	Behavioural Finance	3 per week	4
PSFN4T22	Business Analytics	3 per week	4
PSFN4T23	Alternative Investments	3 per week	4
SP07	Application of Analytical Software	3 per week	4
SP08	Fintech and Big Data	3 per week	4
PSFN4P08	Dissertation	NA	8

# Structured Finance

## Topics

1 Introduction to structured finance.

Financing with Asset-Backed Securities

2 ABS: Ratings and Cost-Benefit Analysis

Collateralized Debt Obligations: Structure and Pricing; Collateralized Loan Obligations

3 Credit swaps

Credit Derivatives; Synthetic ABS and related instruments.

4 MTNs and equity-linked structured notes

5 Design and pricing of convertible, hybrids and mezzanine debt

6 Structuring leveraged finance

7 Economics of Financial Innovation

Competition and the Product Cycle in Financial Innovations; Sources of Innovations; Transactions and Monitoring Costs; Regulation, Taxes, Constraints; Market Segmentation;

8 Understanding New Instruments

The Building Block Approach; Hedging and Managing New Instruments.

### Required Text

Elements of Structured Finance by Ann Rutledge, Sylvain Raines (2009), Oxford University Press.

### Reference Text

Structured Finance: Techniques, Products and Market by Stefano Gatti (2005), Springer.

# International Finance

## Topics

- 1 Introduction and Motivation for International Finance  
Key Issues in International Business Finance; Role of an International CFO.
- 2 Institutional Background of International Finance  
International Payment Mechanism; International ("Euro") Money and Bond Markets; Balance of Payments; Exchange-Rate Regimes.
- 3 Currency Markets  
Spot Markets for Foreign Currency; Exchange Rates; Major Markets for Foreign Exchange; Law of One Price for Spot Exchange Quotes; Translating FC Figures: Nominal Rates, PPP Rates, and Deviations from PPP;
- 4 Forward Exchange Rates for Currency  
Introduction to Forward Contracts; Relation between Exchange and Money Markets; Law of One Price and Covered Interest Parity; Market Value of an Outstanding Forward Contract; Forward Forward and the Forward Rate Agreement; Using Forwards for International Financial Management.
- 5 The Market for Currency Futures  
Handling Default Risk in Forward Markets; How Futures Contracts Differ from Forward Markets; Effect of Marking to Market on Futures Prices; Hedging with Futures Contracts; Pros and Cons of Futures Contracts Relative to Forward Contracts.
- 6 Markets for Currency Swaps  
Fixed-for-Fixed Currency Swaps; Interest-Rate Swaps; Cross-Currency Swaps.
- 7 Currency Options  
Concepts and Uses of Currency Options; Institutional Aspects of Options Markets; Options on Futures; Using Options for Arbitrage, Hedging; Speculation; Hedging and Valuation .
- 8 Exchange Risk, Exposure, and Risk Management  
What Makes Forex Markets Tick? Behavior of Spot Exchange Rates; PPP Theory and the Behavior of the Real Exchange Rate; Exchange Rates and Economic Policy Fundamentals; Measuring Exposure to Exchange Rates; Concepts of Risk and Exposure: Measuring and Hedging of Operating Exposure; Accounting Exposure;
- 10 Managing Credit Risk in International Trade  
Payment Modes without Bank Participation; Documentary Payment Modes with Bank Participation; Standard Ways of Coping with Default Risk;
- 11 Long-Term International Funding and Direct Investment  
International Fixed-Income Markets; "Euro" Deposits and Loans; International Bond and Commercial-Paper Markets; Borrowing Alternatives.
- 12 Cost of International Capital and International Taxation of Foreign Investments

## Reference Text

International Finance: Theory and Policy By Steve Suranovic (McGraw-Hill) 2011.

# Infrastructure and Project Finance

## Topics

1. An Overview of Infrastructure: Demand for Infrastructure; Sustainability and Infrastructure; Definition and Characteristics of Infrastructure; Types of infrastructure companies; Value chain elements; Sources of revenue and financing; Competition and regulation.
2. Infrastructure Investments: Infrastructure as an Asset Class; Investors in infrastructure; Risk-return profiles of unlisted infrastructure; Benchmarking infrastructure investments; Portfolio diversification through infrastructure.
3. Organisational Model: Privatisation Models; Partnership Models; Business Models; Contractual Models; Financing Models.
4. Risk Management: General Risks; Project/Asset-specific Risks; Sector-specific Risks
5. Project Finance: Project Finance Basics; Project Finance and PPP; Basic Structure of Project Finance; Structuring Project Financings - Advisory, Project assessment, Risk analysis and allocation, Financing, Implementation and monitoring.

### **Text Book**

**Infrastructure as an Asset Class: Investment Strategy, Sustainability, Project Finance and PPP (2e)** by Barbara Weber, MirjamStaub-Bisang, Hans Wilhelm Alfen. John Wiley & Sons (2016).

Semester IV

PSFN-4T21

## **Behavioural Finance**

### **Topics**

1. Investment Decision Cycle: Judgment under Uncertainty
2. Utility/ Preference Functions: Expected Utility Theory [EUT]
3. Brief History of Rational Thought: Pascal-Fermat to Friedman-Savage
4. Paradoxes (Allais and Others)
5. Prospect Theory
6. Information Screening Biases
7. Information Processing: Bayesian Decision Making, Heuristics and cognitive biases
8. Forecasting Biases
9. Emotion and Neuroscience
10. Group Behavior: Conformism, herding, fatal attractions
11. Investing Styles and Behavioral Finance

Reference Text:

- Handbook of Behavioral Finance – Brian R. Bruce
- Behavioral finance - Wiley Finance - Joachim Goldberg, Rüdiger von Nitzsch

Semester IV

PSFN-4T22

**Business Analytics**  
**Topics**

1. Foundations of Business Analytics
2. Descriptive Analytics
  - a. Visualizing and Exploring Data
3. Predictive Analytics
  - a. Predictive Modeling and Analysis;
  - b. Forecasting Techniques;
  - c. Simulation and Risk Analysis;
  - d. Introduction to Data Mining
4. Prescriptive Analytics:
  - a. Linear Optimization;
  - b. Applications of Linear Optimization;
  - c. Integer Optimization;
  - d. Nonlinear and Non-Smooth Optimization;
  - e. Optimization Models with Uncertainty

Making Decisions: Decision Analysis

Text Book

**Business Analytics** (2e) by R. Evans James. Pearson Education (2017).

# Alternative Investments

## Topics

1. Introduction to alternative investments: History, evolution, types, regulations, comparison of alternative investments with traditional investments; Categories of alternative investments; Aspects of risk and return
2. Investing in Commodities: Gaining Exposure to Commodities; Commodity Prices Compared to Financial Asset Prices; Economic Rationale; Commodity Futures Indexes.
3. Investing in Real Estate: The Benefits of Real Estate Investing; Real Estate Performance; Real Estate Risk Profile; Real Estate as Part of a Diversified Portfolio; Core, Value-Added, and Opportunistic Real Estate.
4. Investing in Real Estate Investment Trusts; Advantages and Disadvantages of REITs; Different Types of REITs; Economics of REITs.
5. Introduction to Hedge Funds: Hedge Funds vs. Mutual Funds; Growth of the Hedge Fund Industry; Categories of Hedge Funds; Hedge Fund Strategies; Considerations in Investing in Hedge Funds; Hedge Fund Performance; Hedge Fund Investment Strategy.
6. Investing in Mezzanine Debt: Overview of Mezzanine Debt; Examples of Mezzanine Financing; Mezzanine Funds; Venture Capital and the Distinction Between Mezzanine; Financing and Different Forms of Private Equity; Advantages of Mezzanine Debt to the Investor.
7. Investing in Distressed Debt: Vulture Investors and Hedge Fund Managers; Distressed Debt and Bankruptcy; Distressed Debt Investment Strategies; Risks of Distressed Debt Investing.

## Reference Text:

**Alternative Investments: A Primer for Investment Professionals** by Donald R. Chambers, Keith H. Black, Nelson J. Lacey. CFA Institute Research Foundation (2018).

Semester IV      SP-07

## **Application of Analytical Software (Matlab and R) (Seminar Paper)**

1. Introduction and Application of Matlab to Finance
2. Introduction and Application of R software

### **Assessment:**

Continuous evaluation based on presentation, test, quizzes: 60 marks

Submission of research paper: 40 marks



Semester IV      SP-08

**Fintech and Big data**  
**(Seminar Paper)**

Technology is central to modern finance. This course will give students a critical understanding of the latest evolutions in financial technology, and the role Big Data is playing in finance.

Students will gain a competitive edge by analysing the latest topics in the sector: blockchain technology; cryptocurrency; peer-to peer lending; data analytics; data mining and data management; ethics in fintech and big data.

**Assessment:**

Continuous evaluation based on presentation, test, quizzes: 60 marks

Submission of research paper: 40 marks

Semester IV      PSFN4P08

**Dissertation (8 credits)**

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