

# GOKHALE INSTITUTE OF POLITICS AND ECONOMICS

Deemed to be University u/s 3 of the UGC Act, 1956  
PUNE 411004

## M.Sc. (FINANCIAL ECONOMICS) COURSE STRUCTURE AND SYLLABUS

(Effective from academic year 2018-19)

(Approved by Board of Studies on 21-3-2018; Academic Council on 28-3-2018)

Sr. No.	Course Code No.	Name of the Course
<b>COMPULSORY COURSES</b>		
1	FE-A-101	Microeconomics
2	FE-A-102	Macroeconomics and Finance
3	FE-A-103	Accountancy, IFRS & Financial Statement Analysis
4	FE-A-105	Financial Institutions, Markets and Regulation
5	FE-A-106	Corporate Finance and Capital Budgeting
6	FE-A-107	Security Analysis and Portfolio Management
7	FE-A-108	Computational Finance
8	FE-A-109	Basic Econometrics
9	FE-A-110	Financial Econometrics
10	FE-A-111	International Finance – I
11	FE-A-113	Financial Derivatives
12	FE-A-114	Financial Modelling & Engineering
13	FE-A-115	Financial Risk Management
14	FE-A-116	Project Appraisal and Finance
15	FE-A-117	Statistics and Operations Research
16	FE-A-118	Business Analytics
<b>OPTIONAL COURSES (Any four to be opted)</b>		
1	FE-B-101	International Finance – II
2	FE-B-102	Behavioural Finance
3	FE-B-103	Commercial Banking
4	FE-B-104	Developmental Finance
5	FE-B-105	Strategic Finance & Investment Banking
6	FE-B-106	Marketing of Financial Services
7	FE-B-107	Taxation
8	FE-B-108	Insurance Economics
9	FE-B-109	Law and Economics - I
10	FE-B-110	Law and Economics - II
11	FE-B-111	Company Law
12	FE-B-112	Linear Economics I
13	FE-B-113	Linear Economics II

## **FE-A-101: MICROECONOMICS**

### **Module 1: Theories of Consumer Behaviour**

Traditional Approach of Utility Theory, Limitations of the Consumer Theory, Behavioral Approach, The Expected Utility Model, Utility on Lotteries, Axioms and Preferences under Uncertainty, The Expected Utility Theorem, Critiques of the Expected Utility Model

### **Module 2: Theory of Production and Costs**

Types of Resources Used in Production, Production and Costs, Production Decisions, Analyzing Costs and Production, Alternative Theories of Firms' Behavior, Cost Functions, Marginal cost pricing, Duality between production and costs, inferior inputs

### **Module 3: Risk Aversion**

Approximate and Compare Risk Aversion, Certainty Equivalent and Risk Premium Utility Classification according to Arrow-Pratt Index, Utility Maximising Portfolio (static approach), Maximisation of Expected Utility, Behaviour of Optimal Portfolio, The Equilibrium Price of Risk, The Intertemporal Budget Constraint, Background Risk, The Arrow-Debreu Portfolio Problem, The Demand for Contingent Claims, Measures of Risk: Domar Musgrave Index, Roy's Safety Index, Mean –Variance Index, Semi Variance Index, Baumol's Risk Measure, Minimax regret criteria, Decreasing Absolute Risk Aversion (DARA), Constant Absolute Risk Aversion (CARA), Increasing Absolute Risk Aversion (IARA), Decreasing Relative Risk Aversion (DRRA), Increasing Relative Risk Aversion (IRRA), Constant Relative Risk Aversion (CRRA) etc. and their comparative statics

### **Module 4: Markets and Competition**

Review of Perfect Competition, Non-Competitive Market Structures – Monopoly, Monopsony, Non-Competitive Market Structures, Monopolistic Competition, Oligopoly models of output, decision-making, Oligopoly models of price competition, Game Theory, Global Oligopoly, Pricing Practices, Pricing of Multiple Products, Price Discrimination and Dumping, Transfer Pricing, Pricing Practice like Cost-Plus Pricing

### **Module 5: Theory of Incomplete Markets:**

Markets securities and Incomplete Markets, Arrow Debru Theorem, Possible reasons for market incompleteness, Failure of standard complete markets model, Examples of incomplete markets

### **Module 6: Consumption and Saving**

Time Separability, Exponential Discounting, The Demand for Saving, Precautionary Saving with an Endogenous Risk, Arbitrage Theory, Definition of Arbitrage, Asset Pricing through Replicating Portfolio, Asset Pricing, Fundamental Theorem of Asset Pricing, Introduction to Interest Rate Risk, Introduction to Credit Risk

## BASIC READING LIST

- Ferguson, C. E. (1969), *The Neoclassical Theory of Production and Distribution*, Cambridge University Press.
- Gravelle, H. and Rees R. (2003), *Microeconomics*, 3rd Edition, Prentice Hall
- Kreps, David (1992), *A Course in Microeconomic Theory*, Eastern Economy Edition, Prentice Hall of India
- Varian, Hal R. (1992), *Microeconomic Analysis*, 3rd Edition, International Student Edition, W. W. Norton and Company
- Williamson, O. E. and Winter, Sidney G. (Eds) (1993), *The nature of the firm; origins, evolution and development*, Oxford University Press
- Jean Tirole (2014), *The Theory Industrial Organization*, Prentice Hall India, New Delhi
- Le Roy, S.F. and Werner, J. (2010). Principles of Financial Economics. Cambridge University Press
- Gollier, C. (2004). The Economics of Risk and Time. MIT Press
- Cochrane, J.H. (2005). Asset Pricing. Princeton University Press

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## **FE-A-102: MACROECONOMICS AND FINANCE**

**Objectives:** This course has been specially designed to provide understanding of macroeconomics by focusing on the relation between financial markets, monetary economics and macroeconomics. The subject is placed in the context of Indian macro economy and financial sector, aiming to show how theoretical and empirical knowledge of macroeconomics and financial markets provides ways to analyse the salient problems faced by macroeconomic policy makers. It also aims at giving insight into the role of macroeconomic variables, indicators and policy measures in decision making by businesses and investors.

### **Module 1: Global and National Trends in Macroeconomic Indicators:**

Contribution of Financial sector Development in Economic Growth, Financial Liberalization and Economic Development, Financial Interrelation Ratio-Flow of Funds accounting, Business Cycle Indicators Trends in macroeconomic indicators and their implications for investment decisions. Financial databases and their uses

### **Module 2-Macroeconomic Theory in Finance Perspective:**

Theoretical Underpinnings of Macroeconomics and Finance- Modern macroeconomic thought – competing schools of macroeconomic thought-- neoclassical synthesis- macro financial linkages- contemporary macro financial theories from -Keynes, Tobin to Minsky, Bernanke, Mishkin, Shiller, Krugman

### **Module 3: Determinants of the Money Supply, Liquidity and Credit**

Theoretical and Empirical Definitions of Money The debate relating to the definition of money Liquidity theory Gurley and Shaw Hypothesis The Reserve Bank of India's Monetary and Liquidity Aggregates--Determinants of the Money Supply-bank credit Multiplier-Determinants of credit. Central Bank and Base Money -Sources of Base Money – RBI Balance Sheet – Factors that Affect the Monetary Base – Factors that add to the Monetary Base – Foreign Exchange Rate Intervention and the Monetary Base – Factors that Subtract from the Monetary Base – The Budget Deficit and the Monetary Base -The Monetary and Fiscal Interface.

### **Module 4: Money Transmission Mechanics**

Monetary Transmission Mechanism Channels of monetary transmission mechanism, Impediments to monetary transmission mechanism in India.

### **Module5: Theoretical Framework underlying the Monetary Policy formulation**

Targets and Goals of Monetary Policy- Optimal Monetary Policy Role of Monetary Policy in Global Financial Crisis – Conflict among Goals- Criteria for Choosing Intermediate Targets – Criteria for Choosing Operating Targets.

### **Module 6: Structure, Framework and Instruments of Monetary and credit Policy in India:**

Accountability and autonomy of Reserve Bank of India – Liquidity, credit and money management framework in India, Revisiting the Choice of Nominal Anchor for India's Monetary Policy, The Choice of Inflation Metric in India, Monetary Policy Targets Rules vs Discretion – The Taylor Rule – Numerical Target and Precision Operating Targets, Instruments and Liquidity Management, Policy measures to address the issues with Monetary transmission mechanism in India

**Module 7: Macroeconomic Policy in Global Financial Environment:**

India's Balance of payments – Implications of Current account and capital account deficits and surplus-Managing capital flows, volatility of capital flows Capital Flows, Exchange Rate Volatility and Financial Stability -Bubbles, Panics and Crashes, History of Financial Crises, Policy Responses to Financial Crises

**Reading List:**

- Mishkin, Frederic (2007), The Economics of Money, Banking and Financial Markets, 8th ed., Addison Wesley Longman Publishers.
- Bain, Keith & Howells, Peter (2009), Monetary Economics: Policy and Its Theoretical Basis, Palgrave.
- Friedman, Ben & Hahn, F.H. (Eds.) (1990), Handbook of Monetary Economics, Vols. 1, 2, & 3, North Holland Publishers.
- Blinder, Alan (1998), Central Banking in Theory and Practice, The MIT Press.
- Langdana, Farrokh (2009), Macroeconomic Policy: Demystifying Monetary and Fiscal Policy, 2nd Edition, Springer.

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## **FE-A-103: ACCOUNTANCY, IFRS AND FINANCIAL STATEMENT ANALYSIS**

### **Objectives:**

The course aims at providing a thorough understanding of various essential concepts of accountancy and preparation of financial statements using the IFRS framework. The course adopts a decision-maker perspective of accounting by emphasizing the relation between accounting data and the underlying economic implications for various security market and firm level portfolio management decisions.

### **Module 1: Basic Principles**

Financial Accounting & Accounting Standards- Accounting Equations – Users of Accounting Statements, Importance – Objectives and Principles – Accounting Concepts and Conventions – Principle of Double Entry Book Keeping and The Generally Accepted Accounting Principles (GAAP)

**Module 2: Preparation of Final Accounts/Statement-** Preparation of Financial Statements of Companies in Vertical Form. Introduction to IFRS- IAS 1-Presentation of Financial Statements, IAS 8-Accounting Policies & Changes in Accounting Estimates and Errors, IAS 10- Events After the Reporting Date, IAS 18- Revenue, IAS 37- Provisions, Contingent Assets and Contingent Liabilities, IAS 16-Property Plant and Equipment, IAS 2 Inventories

**Module 3:** IAS 38 Intangible Assets, IAS 17 Accounting for Leases, IAS 23 Borrowing Costs IAS 36 Impairment of Assets IFRS 5 Non-Current Assets Held for Sale and Discontinued Operations

**Module 4:** IFRS 3 Business Combination, IAS 27 Separate Financial Statements IAS 28 Investment in Associates and Joint Ventures

**Module 5:** IAS 21 Effects of Changes in Foreign Exchange Rates, IAS 12 Income Taxes, IFRS 8 Operating Segments, IAS 24 Related Party Disclosure, IAS 33 EPS

**Module 6:** IAS 39 Financial Instruments Recognition and Measurement, IFRS 2 Share Based Payment

**Module 7: Statement of Changes in Funds Funds Flow Statement** – IAS 7 Statement of Cash Flows – Funds from Operations – Preparation and Analysis of Cash Flow Statement and Funds Flow Statement.

**Module 8: Analysis of Companies' Annual Reports-** Provisions of the Companies Act 2013 – Provision Affecting Preparation – Presentation & Analysis of Audit Reports & Directors' Reports, Du Pont Analysis, Other important financial ratios, Non-financial (strategic) models used for analysis of company performance

**Reading List**

- Bernstein, L., Wild, John, (1999), Analysis of Financial Statements, 5/e, McGraw-Hill.
- Bhattacharyya, Asish K. (2006), Financial Accounting for Business Managers, PHI.
- Gupta, Ambrish (2007), Financial Accounting Management An Analytical Perspective, Pearson Education.
- Stice and Stice (2007), Financial Accounting Reporting and Analysis, Thomson.
- Bhattacharya, Ashish K. (2007), Introduction to Financial Statement Analysis, Elsevier India (P) Ltd.
- Anthony, Robert N., Hawkins, David F. and Merchant, Kenneth A. (2005), Accounting: Text and Cases, TMH.
- Horngreen (2007), Financial Accounting, 8/e, Pearson Education.
- Weygandt, Kieso, Kimmel (2006), Financial Accounting, 4/e, Wiley India Edition
- Ghosh, T.P., (2010), Understanding IFRS, Taxmann.
- D'Souza, Dolphy, (2009), Indian Accounting Standards and GAAP In 2 Vol., Snow White Publications Pvt. Ltd.

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## **FE-A-105: FINANCIAL INSTITUTIONS, MARKETS AND REGULATIONS**

**Objectives:** The objective of the course is to provide a comprehensive understanding the nature and Economic functions of the several types of financial institutions that are present in the market. It is expected that students will develop critical skills in assessing the relevance of the principles of finance and financial intermediation to real world situations, and to better understand the role that financial markets play in the business environment that they will face in the future. The focus will be on the description of Indian financial markets, institutions, instruments and policies. The Financial Regulation Course is designed to provide with the background; rationale and regimes of financial regulation in India. This understanding provides an essential background for decision making and analysis of security market transactions or policies.

### **Contents:**

#### **Module 1: Financial System: Structure and Role**

Significance of Banking and Financial Institutions -Structure of the Financial System- Banks and Other Financial Institutions - Financial Innovation -Function of Financial Markets - Overview of Structure of Financial Debt and Equity Markets Primary and Secondary Markets-Exchanges and Over-the-Counter Markets - Money and Capital Markets- Internationalization of Financial Markets- International Bond Market - Eurobonds - Eurocurrencies - World Stock Markets - Function of Financial Intermediaries - Transaction Costs.

#### **Module 2: Banking and Non- Banking Institutions**

Institutional structure in India- Commercial - Cooperative banks - Private sector banks - Non-Bank Financial Intermediaries - Institutional structure in India - Types and comparison of asset liability structures of various NBFCs - Finance Companies - Mutual Funds - Lease finance - Housing Finance - Venture Capital funds - Money Market Mutual Funds - Hedge Funds – Insurance companies - Infrastructure Finance Companies.

#### **Module 3: Money Market**

Institutions and constituents - Call Money Market - The Discount Market -The 'Parallel' Markets - The Interbank Market -The Market for Certificates of Deposit - The Commercial Paper Market - The Local Authority Market - Repurchase Agreements - The Euromarkets -The Significance of The Parallel Markets - Monetary Policy and the Money Markets. - Regulation of Money Markets and Clearing Houses.

#### **Module 4: Capital Market**

The Importance of Capital Markets - Characteristics of Bonds and Equities - The Trading of Bonds and Equities - Bonds: Supply, Demand and Price - Equities: Supply, Demand and Price - The Behaviour of Security Prices - Hybrid Securities - Preference Shares - Convertible Debentures - Non convertible Debentures (NCDs) Partially Convertible debentures (PCDs) - Fully Convertible Debentures (FCDs) - Warrants - Debt with Call and Put Options

#### **Module 5: Financial Regulation- Reserve Bank of India**

Reserve Bank of India as a Financial regulator and Financial Authority - Regulation and supervision of banking system - Basel Norms - Early Warning Signals of Credit Deterioration and Failure in banks -



The co-ordination between the financial sector regulators like SEBI, IRDA PFRDA and the RBI - Vulnerability of Small Private Sector Banks - The Board for Financial Supervision

### **Module 6: Evolving areas for Financial Regulation**

Subprime Crisis – Regulation of Non-Bank Financial Intermediaries - Mortgage Backed Securities and OTC market - Derivatives Markets - Foreign Exchange Derivatives and Swaps.

### **Module 7: Regulation of Capital Market - Securities Exchange Board of India**

Regulations - Securities and Exchange Board of India Act, 1992 - Securities Contract (Regulation) Act 1956 - Companies Act 1956 - Depositories Act 1996 - Prohibited Transactions - Insider Dealing - Market Abuse - Money Laundering -Corporate Governance and Management Guidance And Supervision - Role of stock exchanges and NSDL.

### **Reading List:**

- Fabozzi, Frank, Modigliani, Franco, Jones, Frank (Feb 2009), Foundations of Financial Markets and
- Institutions, International Edition, 4th Edition, Pearson Higher Education.
- Mishkin, Frederic S. Find all the books, read about the author, and more.
- Eakins, Stanley G. (2005), Financial Markets and Institutions (5th Edition), Addison Wesley.
- Howells, Peter, Bain, Keith (2007), Financial Markets and Institutions, 5th Edition.
- Madura, Jeff (2008), Financial Markets and Institutions, 8th edition, Thomson Publications.
- Kidwell, David, Blackwell, David W., Whidbee, David A. et.al. (2008) Financial Institutions, Markets, and
- Money, 10th Ed., John Wiley & sons.
- Barth, James R., Caprio, Gerard, and Levine, Ross (2008), Bank Regulations are Changing: For Better or Worse?, Association for Comparative Economic Studies.
- Goldstein, Morris (2006), Financial Regulation after the Subprime and Credit Crisis, Washington: Peterson institute.
- Wymeersch, Eddy (2006), The Structure of Financial Supervision in Europe: About Single, Twin Peaks and Multiple Financial Supervisors, Social Science Electronic Publishing, Inc.

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## **FE-A-106: CORPORATE FINANCE AND CAPITAL BUDGETING**

**Objectives:** The course aims at providing understanding of capital budgeting techniques, the advantages of using Net Present Value versus Internal Rate of Return to calculate the value of financing decisions or projects, when and how to use payback periods and risk analysis to rank financing decisions, identify the formulas for calculating cash flows resulting from investments and their use to determine the profitability of a financing decision or project for a business.

In terms of corporate finance best practices, students will also learn about the financial and strategic basis for financing decisions, various public and private techniques and products available for both short term and long term financing, techniques for cash flow management, forecasting and planning, and best practices of cash flow management as it applies to real life examples.

### **Contents:**

#### **Module 1: Introduction**

Finance Manager's Role – Separation of Ownership and Management Objectives of the Firm and Corporate Governance – Financial Statements and Cash Flow – Financial Statements Analysis and Long-Term Planning

#### **Module 2: Working Capital Management**

Working Capital Components – Leverage – Cash management – Receivables Management – Inventory Management – Financing Current Assets – Regulation of Bank Finance.

#### **Module 3: Capital Budgeting**

Measures of Investment - Choice Investment and Financing Decisions – Time Value of Money – Net Present Value – Internal Rate of Return – Discounted Payback Period – Cost of Capital – Selection of Criteria Risk, Return and Opportunity Cost of Capital Valuation of Bonds and Common Stock Scenario Testing and Sensitivity Analysis Strategy V Investments – Practical Problems in Budgeting – Agency, Compensation and Performance Measure.

#### **Module 4: Patterns of Financing**

Internal Funds – Common Stock – Debt – Financial Markets/Institutions – Issue of securities – Venture Capital – Initial Public Offering – Security Sales and Auctions – Private Placements and Public Issue Junk Bonds.

#### **Module 5: Capital Structure & Financing of Long Term Capital**

Planning Capital Structure – Capital Structure Choice Extended Probabilistic Analysis – Dividend Payout Policies – Share Valuation – Sources of Long Term Capital – Debt Securities – Debt Policy and Leverage Risk Management.

#### **Module 6: Use of Derivatives and Corporate Finance**

Options and Corporate Finance – Options and Corporate Finance: Extensions and Applications – Warrants and Convertibles – Derivatives and Hedging Risk.

**Reading List:**

- Ross, Stephen, Westerfield, Randolph, Jaffe, Jaffrey (February 2002), Corporate Finance, 6th Ed., McGraw-Hill Companies.
- Berk, Jonathan, and DeMarzo, Peter (2007), Corporate Finance, Pearson International.
- Brealey, R.A., Myers, S.C. and Allen, F. (2003), Principles of Corporate Finance, 7th Ed, McGrawHill.
- Copeland, T., Weston, F., and Shastri, K. (2004), Financial Theory and Corporate Policy, 4th Ed., New York: Addison-Wesley.

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## **FE-A-107: SECURITY ANALYSIS & PORTFOLIO MANAGEMENT**

**Objectives:** This course aims at providing an in depth understanding of the theories, principles, and techniques of security valuation, analysis and portfolio management of fixed income securities, equity and derivative securities as well as portfolio management of index funds and insurance companies.

### **Module 1: Valuation of Equity Shares**

A Philosophical Basis for Valuation – The Role of Valuation – Dividend Discount Models – Free Cash Flow to Equity Discount Models – Free Cash Flow to the Firm – Cost of Capital Approach – Firm Valuation – Estimating Equity Value per Share – Relative Valuation – Earnings Multiples – Book Value Multiples – Valuing Financial Value Firms.

### **Module 2: Valuation of Equity Shares -Fundamental Analysis**

Economic Analysis – Economic Forecasting and Stock Investment Decision – Forecasting Techniques – Industry Analysis – Industry Life Cycle – Structural Analysis – Techniques for Evaluating Relevant Industry Factors – Sources of Information for Industry Analysis – and Company Analysis – Analysis of Financial Statements – Impact of Changes in Accounting Policies – Sizing up the Present Situation & Prospects – Management Evaluation –Forecasting Earnings.

### **Module 3 Valuation of Equity Shares -Technical Analysis**

Theory of Technical Analysis – Dow Theory- Bar Charts – Point and Figure Charts – Contrary Opinion Theories – Relative Strength Analysis – Moving Average Analysis – MACD, Oscillator, Elliot Wave Theory Evaluation of Technical Analysis

### **Module 4 - Portfolio Theory –Models of Risk Reward Relationship**

Standard Capital Asset Pricing Model– **Characteristics of Opportunity Set Characteristics of Portfolio – Diversification – Minimum Variance Portfolio – Efficient Frontier (with and without short sales)** Arbitrage Pricing Theory – Fama-French Three Factor Model. Single Index Model– Beta Estimation and Forecasting.

**Module 5: Portfolio Theory-** Efficient Market Hypothesis (EMH) – Various forms of Efficient Markets Hypothesis – Weak form – Semi-strong and Strong Form Empirical evidence on Efficient Market Hypothesis–Implications of EMH for Security Analysis, Portfolio Management and Investment– Passive vs Active Management Strategies – Index Funds Markowitz Risk Return Optimization – Sharpe's Optimization –

### **Module 6: Evaluation of Portfolio Performance and Risk adjusted Measures**

Return (Money Weighted v/s Time Weighted) – Risk Adjusted Performance Measures – Sharpe's Ratio – Treynor's Ratio – Jensen's Alpha – Sortino Ratio –Fama's Decomposition of Overall Return – Evaluation of Actively Managed Portfolios – Benchmark Based Performance Evaluation.

### **Module 7: Valuation of Fixed Income Securities**

Bond Returns and Prices – Systematic and Unsystematic Risk involved in Fixed Income Securities – Present Value Model and Bond Valuation – Duration Shifts – Convexity – Bond Price Volatility – Term Structure of Interest Rates – Analysis of Bonds with Embedded Options.  
Bond Portfolio Management – Duration, Shift and Immunization – Passive and Active Strategies

**Reading List:**

1. Frank, Fabozzi (2011), Markowitz, Harry, Equity Valuation and Portfolio Management, Wiley.
2. Reilly, Frank K. and Brown, Keith C. (RB) (2002), Investment Analysis and Portfolio Management, 7th Ed. Dryden.
3. Frank, Fabozzi, (Ed.) (1989), Portfolio Investment Management, Probus Publishing.
4. Das, Satyajit (2003), Swaps/Financial Derivatives, 3rd Ed., Vol. 1-4, Wiley Finance.
5. Haugen, Robert (1987), Modern Investment Theory, Prentice-Hall of India.

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## **FE-A-108: COMPUTATIONAL FINANCE**

### **Objectives**

This course aims at providing an introduction to the computational issues in financial problems. The focus is on an understanding of the concepts and tools in computational techniques with R software. In addition, the course introduces numerical techniques for valuation, pricing and hedging of financial investment instruments such as fixed income securities and options.

### **Module1: What is R**

Communication with R, R software, R interfaces, R syntax, R code, R help, R packages, basic operations in R- vectors, matrices and lists in R, vector algebra, matrix algebra, computing asset returns-- **Functions in R** Creating functions, calling functions, computing yields, bisection method, Newton-Raphson method, computing price volatility --**Graphics in R** -Ggplot, spot rates, extracting spot rates from yield curves, spot rate curve and yield curve

**Module 2: Data Frames in R** Organizing values into data frames, loading frames from files and merging them, working with real-world data- testing for correlation between data sets, linear models and installing additional packages, Basic R statistics, Covariance, correlation, autocorrelation, linear combinations of random variables, descriptive statistics- histograms, sample means, variances, co-variances and autocorrelations

### **Module 3: Basic R probability**

Univariate random variables and distributions, characteristics of distributions, the normal distribution, linear function of random variables, quantiles of a distribution, value-at-risk

### **Module 4: Computational Finance: Basic Financial Mathematics:**

Time Value of Money, Annuities, Amortization, Yields ,Bonds , Bond Price Volatility .

### **Module 5: Computational Methods for Fixed Income Securities:**

Price Volatility, Duration, Convexity, Term Structure of Interest Rates, Introduction, Spot Rates, Extracting Spot Rates from Yield Curves, Static Spread, Spot Rate Curve and Yield Curve, Forward Rates, Term Structure Theories.

### **Module 6: Computational Methods for Option Pricing:**

Basics, Exchange-Traded Options, Basic Option Strategies, The Binomial Option Pricing Model, The Black–Scholes Formula, Using the Black–Scholes Formula, American puts on a Non-Dividend-Paying Stock, Options on a Stock that Pays Dividends, Traversing the Tree Diagonally, Sensitivity Analysis of Options, Sensitivity Measures (“The Greeks”).

### **Module 7: Numerical Methods for Finance:**

Numerical Methods for Finance, Numerical Differentiation and Greeks Partial Differential Equations  
– Weighted Monte Carlo Optimization/Calibration – Fourier Methods – Laplace Inversion – Finite  
Difference Methods – Mathematical Design Patterns – Stochastic Volatility.

**Reading List:**

- Introductory Statistics with R, Second Edition (Statistics and Computing, Paperback), by Peter Dalgaard, Springer-Verlag, New York.
- Financial engineering and computation by Yuh-Dauh Lyuu
- Beginner's Guide to R by Alain Zuur, Elena Ieno and Erik Meesters, Springer-Verlag.
- R Cookbook by Paul Teetor, O'Reilly. Software for Data Analysis: Programming with R (Statistics and Computing) by John M. Chambers (Springer)
- Hull, John C. (2005), Options, Futures and other Derivatives and Finance, 6th Ed., Prentice hall.
- Ross, Sheldon M. (1999), An Elementary Introduction to Mathematical Finance, Cambridge Press.

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## **FE-A-109: BASIC ECONOMETRICS**

**Objective:** The objective of this paper is to introduce some of the statistical and econometric techniques that are widely used in empirical work in economics and other related disciplines to students. It covers the problems faced in estimation and inference in the context of the single-equation linear regression model. The main objective of the paper is to teach students how to apply relevant econometric methods to analyse data and interpret the results from such analyses.

The focus is on conceptual understanding and 'hands on' applications using economic data drawn from real-world examples, rather than on formal theoretical proofs. By the end of the paper, students should be able to appreciate and interpret the econometric and statistical analysis reported in many studies in economics and be able to carry out and interpret their own econometric analysis.

**Module 1: Review of Basic Statistical and Mathematical Concepts:** Random variables and distribution, characteristics of distributions (expected value, variance, conditional expectation), sample and sampling distributions: Normal Distribution and related distributions (chi-squared, t- and F-distributions), Central Limit Theorem, estimators and estimation, properties of estimators, elements of Matrix Algebra, nature and scope and need for study Econometrics

**Module 2: The Classical Linear Regression Model: Estimation and Inference:** Ordinary least squares (OLS) estimation, the Classical assumptions, the Gauss- Markov theorem and properties of the OLS estimators, interval estimation and hypothesis testing and prediction, reporting and interpreting regression results, Maximum Likelihood techniques, Restricted Least Square estimation, Likelihood Ratio (LR), Wald and Lagrange Multiplier (LM) Test, Minimum Variance Bound (Rao- Cramer Inequality Theorem)

**Module 3: Non-linear regression:** Conversion of non-linear forms into linear forms, testing linear verses non-linear functional form, appropriateness and relevance of the choice of functional form

**Module 4: Binary (or Dummy) Variables:** Exogenous Dummy Variable- Formulating and interpreting coefficients on dummy explanatory variables, interactions involving dummy variables and use of dummy variables in seasonal analysis, piece wise regression analysis, the dummy variable alternative to chow test, Dependent Dummy variable - Linear Probability Model, Problems relating to LPM, Logit and Probit Model, Multinomial Choice Models: Ordered Response Model; Unordered Response Model, Censored and Truncated Regression Model

**Module 5: Violation of the OLS Assumptions:** Introduction, Consequences of violation of OLS assumption, GLS Estimation- Aitken's generalization of Gauss Marks Theorem, Estimation of  $\sigma^2$ . Heteroscedasticity & Autocorrelation: Causes and consequences and remedial procedural, diagnostic test

**Module 6: Multicollinearity:** Introduction, perfect verses imperfect Multicollinearity, Consequences, tests for detection and remedies for Multicollinearity.



**Module 7: Lagged Variables and Distributed- Lag Models:** Introduction, Consequences of applying OLS, Almon's lag approach, Koyak Transformation: Partial adjustment hypothesis and adaptive expectations hypothesis, estimation of distributed lag models etc.

**Module 8: Simultaneous Equation Models (SEM):** Introduction, Structural, reduced form and final form model, Rational behind the use of SEM - simultaneous bias and inconsistency of the OLS estimator, Problem of Identification: Rank and Orders conditions, Methods of estimation: ILS, 2SLS, Instrumental Variable, LIML (LVR), Mixed estimation Method, 3 SLS and FIML methods

**Note:** *Students will be taught software packages for performing econometric applications.*

## **BASIC READING LIST:**

1. Griffiths, Hill and Judge, Learning and Practicing Econometrics, Wiley, New York.
2. Judge, G.G. et al., Introduction to the theory and Practice of econometrics, 2nd Edition John Wiley and Sons.
3. Green, William H., **Econometric Analysis**, Prentice Hall.
4. Johnston and Dinardo, Econometric Methods, 4th Edition McGraw-Hill International Edition.
5. Madala G.S., Introduction to **Econometrics**, John Wiley & Sons.
6. Madala, G.S. (1986) Limited Dependant and Qualitative Variables in Econometrics, Cambridge University Press, Cambridge.
7. Wooldridge J., Introductory **Econometrics: A Modern Approach**, South-Western College Pub.
8. Baltagi, Badi H. , Econometrics, 5th edition, Springer
9. Kennedy, Peter (2003), A Guide to **Econometrics**, 5th Edition, The MIT Press
10. Studenmund, A.H., Using Econometrics: A Practical Guide, Addison Wesley Publishing Company. Boston,
11. Gujarati, Damodar, **Basic Econometrics**, 4th Edition, Tata McGraw Hill Publishing Company, New Delhi
12. Mood, Alexander M, Graybill, Franklin A. and Duane C. Boes, (1974), Introduction to the Theory of Statistics, McGraw-Hill.
13. Goldberger, S., Introductory Econometrics, Harvard University Press.
14. Koutsoyiannis, A., Theory of **Econometrics**, St Martin's Press.
15. Krishna, K. L., Econometric Application in India, Oxford University Press, Delhi.
16. Larsen, Richard J. & Marx, Morris L, An Introduction to Mathematical Statistics and its Application, 4th edition, Prentice Hall.
17. Lewis-Beck, Michael S. , Regression Analysis (Hand Book of Quantitative Application for social Science Volume 2, SAGE Publications Inc., 1:68
18. Pindyck & Rubinfeld, Econometrics Models & Economic Forecast, 4th edition, McGraw-Hill/Irwin

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## **FE-A-110: FINANCIAL ECONOMETRICS**

Syllabus: M.Sc. (Financial Economics) w.e.f. AY 2018-19. Approved by Board of Studies 21-3-2018; Academic Council 28-3-2018

**Objectives:** The course intends to familiarize students with the principal techniques in Financial Econometrics. The basic econometric techniques for finance like regression analysis, time series analysis, Co integration & error correction methods are covered. It should provide an understanding of the use of these techniques in financial economics.

#### **Unit 1: Financial Econometrics: Scope and Methods**

The Data Generating Process – Financial Econometrics at Work – Time Horizon of Models – The Behavior of Financial Variables – Distributions of Returns – Multivariate Returns – Empirical Properties of Returns.

#### **Unit 2: Modeling Univariate Time Series**

Stationarity – Correlation and Autocorrelation Function – Autoregressive Models – Properties of AR Models – Identifying AR Models in Practice – Goodness of Fit – Forecasting – Moving-Average Models – Properties of MA Models – Identifying MA Order – Estimation – Forecasting Using MA Models – ARMA Models – Properties of ARMA (1,1) Models – General ARMA Models – Identifying ARMA Models – Forecasting Using an ARMA Model.

#### **Unit 3: Testing for Trends and Unit Roots**

Unit Root Processes, Testing for Unit Roots- Dickey Fuller Test, Augmented Dickey Fuller Test, Phillips- Perron Test, KPSS Test, Structural Change, Problems in Testing for Unit Roots

#### **Unit 4: Time-varying Volatility Models**

Characteristics of Volatility, Stylized Facts, The ARCH Model- Properties and Weaknesses of ARCH Models, The GARCH Model- Extensions to the basic GARCH model, Asymmetric GARCH models, Estimation of the GARCH Models, Stationary ARMA-GARCH Models, Lagrange Multiplier Test, Multivariate GARCH Formulations.

#### **Unit 5: Multivariate Time Series Analysis**

Weak Stationarity and Cross-Correlation Matrices, Cross-Correlation Matrices, Vector Autoregressive Models- Reduced and Structural Forms, Estimation and Forecasting with VAR Models, Impulse responses and variance decompositions, Vector Moving-Average Models, Vector ARMA Models.

#### **Unit 6: Co integration and Error Correction Models**

Linear Combinations of Integrated Variables, Co-integration and Common Trends, Co integration and Error Correction, Testing for Co integration- Engle- Granger methodology, Johansen Test

#### **Unit 7: The Evaluation and use of Foreign Exchange Rate Forecasting Services**

Introduction, Construction of the Portfolio, Different approaches to the evaluation of forecasting services, the portfolio, Composite forecast approach.

#### **Unit 8: High-Frequency Data Analysis and Market Microstructure**

Modelling High Frequency Data – Data Sources and Filtering – Modelling the Time between Trades – Intraday Volatility and Forecasting Volatility – Bid–Ask Spread – Empirical Characteristics of Transactions Data – Models for Price Changes – Duration Models.

**Unit 9: Introduction to Panel Data Analysis:** Fixed Effect Vs Random Effect Model- Dynamic Panel data analysis.

**Note:** *Students will be trained in software packages for performing econometric applications.*

**Reading List:**

- Baltagi, B.H. (2008), Econometric Analysis of Panel Data, 4th Edition, Wiley
- Brooks, Christopher (2002), Introductory Econometrics for Finance, Cambridge University Press.
- Campbell, Lo and Mackinlay (1997), The Econometrics of Financial Markets, Princeton University Press.
- Gouriéroux, Christian and Jasiak, Joann (2001), Financial Econometrics, Princeton University Press.
- Gujarati, Damodar and Porter, Dawn (2009), Essentials of Econometrics 4th Ed., McGraw-Hill/Irwin.
- Hamilton James (1994), Time Series Analysis, Princeton.
- Dougherty, Christopher (2007), Introduction to Econometrics, 3rd Ed., Oxford University Press.
- Studenmund, A. H. (2010), Using Econometrics: A Practical Guide, 6th Ed., Addison-Wesley.
- Tsay, Ruey S. (2002): Analysis of Financial Time Series, Wiley Series in Probability and Statistics.

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**FE-A-111: INTERNATIONAL FINANCE - I**

Syllabus: M.Sc. (Financial Economics) w.e.f. AY 2018-19. Approved by Board of Studies 21-3-2018; Academic Council 28-3-2018

**Objectives:** The objective of the course is to provide an understanding of both the key features of foreign exchange markets and the actual problems of financial decision making within an environment of free flows of foreign capital and floating exchange rates. The course focuses on the nature of foreign exchange exposure and risk and its management arbitrage, speculation, hedging, the types of foreign exchange operations spot, forward, foreign exchange swaps, currency swaps, futures and options.

**Contents:**

**Module 1: International Finance Introduction and Overview:** International Financial Markets – Increasing Interdependence in the Global Economy – Trends in International Trade and Cross Border Financial Flows – Impact on Risk Management – Objectives and Decision Making of the Firm in Global Context – Overview of International Monetary Systems and Recent Developments in International Markets – International Monetary System – Balance of Payments – IMF Standards for BOP Compilation – Accounting and Reporting-Euromarkets.

**Module 2: Nature, Exposure and Measurement of Risk in the Foreign Exchange Market:** Foreign exchange spot and forward contracts – Exchange Rate Foreign exchange swaps- Speculation and Arbitrage in foreign exchange trading-Relationship between Spot and forward contracts Decision making by private firms under exchange rate and Interest Rate Volatility-Accounting treatment of risk exposure—conduct of business under pegged and floating rates.

**Module 3: Currency and Interest Rate Derivatives:** Forward Contract Vs. Future Contract – Institutional Arrangements for Trading Futures – Cash Settlement and Marking to Market – Future Pay-Offs as a Function of the Price of Underlying Asset – Use of Futures Contracts to Hedge a Risky Position – Pricing of Futures – Risk Premium – Relation Between Futures Price and Future Spot Price – Market Volatility – Currency and Interest Rate Options – Basic Concept – Institutional Arrangements for Trading Options – Put and Call Options at Prices at Maturity and at Prices Prior to Maturity – The Put-Call – Forward Parity Formula – Replicating Portfolio Concept Used for Constructing an Option – Price an Option and Hedge an Option Position –Volatility – Concept of Delta Hedging for Option Portfolio Pricing Currency and Interest Rate Swaps – Origin and Growth of the Currency Swap – Market-Cash Flow Obligations in Currency and Interest Rate Swap Markets – Transforming Cash Flows from Floating Rate Terms to Fixed Rate Terms and From Foreign Currency Terms to Domestic Currency Terms – Price Risks- Management of Price Risks –Simulation Approach.

**Module 4: Theories of Exchange Rate:** Parity Conditions and the Interrelationships Among Exchange Rates – Interest Rates and Other Capital Market Variables – Use of Purchasing Power Parity (PPP) and Calculation of PPP Exchange Rates – Connection Between Real Exchange Rates and PPP – Use of PPP by Private and Public Policy Makers for Strategic Decision Making – Interest Rate parity – Fisher Open Condition – The Relationship Between Interest Rates – Spot Rate and Forward Rate- Deviations from Interest Rate Parity and Arbitrage Transactions – Spot Exchange Rate Determination – Monetary Approach to Exchange Rates – Effects of Changes in Exchange Rates – Elasticity Approach – Absorption Approach – Portfolio Balance Approach – Impact of Changes in Money Supply – Real Income – Short Term Interest Rate – Inflation Rates on Spot Exchange Rate – Impact of Macroeconomic Variables on Spot Exchange Rate.

**Module 5: Foreign Exchange Market Efficiency:** Definition of Foreign Exchange Market Efficiency – Technical Trading Models for Measuring Spot Market Efficiency – Empirical Evidence on Spot Market Efficiency – Technical Models and Empirical Evidence on Forward Market Efficiency.

**Module 6: Exchange Rate Forecasting:** Framework for the Process of Forecasting Exchange Rates – Benefits of Using Different Techniques of Forecasting Under Different Circumstances – Evaluating the Forecasts – Accurate Vs. Useful Forecasts – Techniques of Forecasting Exchange Rates at the Short, Medium and Long Run Horizons.

**Reading List:**

- Shapiro, Alan C. (2006) Multinational Financial Management, 8/e, Wiley & Sons. ISBN 0471737690.
- Eiteman, D. K., Stonehill, A. I., Moffeit, M. H. (1999) Multinational Business Finance, 8th Ed., Addison Wesley.
- Levi, Maurice D. (2009), International Finance, 5th Ed., Routledge.
- Levich, Richard M. (2001), International Financial Markets Prices and Policies, 2nd Ed., McGraw-Hill Irwin

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## **FE-A-113: FINANCIAL DERIVATIVES**

**Objectives:** This course provides an in depth understanding of various derivative securities and markets. It covers options, futures, forwards, swaps, interest rate forwards and options, commodity derivatives. It aims at giving the conceptual understanding as well as practical knowledge about derivative markets in India.

### **Contents:**

#### **Module 1: Derivative Markets**

Definition and Origin of Derivatives – Derivative Markets and Instruments – Growth of Derivatives in India – Basic Derivatives – Forwards, Futures, and Options – Derivative Terminologies.

#### **Module 2: Forwards and Futures**

Structure of Forwards and Futures Markets – Forward Contracts – Futures Exchanges and Contracts – Types of Futures – Mechanics of Future Trading – Major Characteristics – Trading Process – Price Quotations – Hedging and Speculation with Commodity Futures – Interest Rate Futures – Currency Futures and Stock Index Futures, Principles of Pricing Forwards – Futures and Options on Futures Contracts – Forwards and Futures Hedging – Pricing of Index Futures Contracts – Stock Index Arbitrage.

#### **Module 3: Options**

Option Pricing – Principles of Call and Put Option Pricing – Binomial and Black – Scholes Option Pricing Models – Factors Affecting Option Prices – Basic and Advanced Option Strategies – Types of Options – Interest Rate Options – Currency Options and Trading Strategies – Option Pricing Models – Options on Futures Contracts and Exotic Options – Elementary Inventory Strategies – Complex Investment Strategies – Covered Call Writing – Protective Put – Straddles and Strangles – Spreads – Evaluation of Option Based Investment Strategies – Risk Associated with Options – Options Sensitivities.

#### **Module 4: Swaps**

Evolution of Swap Market – Interest Rate Swaps – Currency Swaps – Equity Swaps – Swap Terminology – Motivations Underlying Swaps – Mechanics of Swap Transactions – Valuation and Application of Swaps.

#### **Module 5: Interest Rate Forwards and Options**

Forward Rate Agreements – Interest Rate Options – Interest rate Swaptions and Forwards – Interest Rate Derivatives Strategies

#### **Module 6: Commodity Derivatives**

Evolution of Commodity Derivative Markets in India – Products – Participants – Functions – Instruments Available for Trading – Pricing of Commodity Futures – Hedging – Speculation – Arbitrage – Trading – Clearing and Settlement – Risk Management – Regulatory Framework.

### **Reading List:**

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- Hull, John, C. (2009), Options, Futures, and Other Derivatives, Pearson Prentice Hall.
- Kolb, Robert W., and Overdahl, James A. (2003), Financial Derivatives, John Wiley & Sons, Inc.
- Chance, Don M., and Brooks, Robert (2008), Introduction to Derivatives and Risk Management. Thomson South Western.
- Whaley, Robert E. (2006), Derivatives: Markets, Valuation, and Risk Management, John Wiley & Sons, Inc.
- Schofield, Neil C. (2007), Commodity Derivatives: Markets and Applications, John Wiley & Sons, Inc. M.Sc. (Financial Economics) Syllabus 2014-15 Page 17

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## **FE-A-114: FINANCIAL MODELLING AND ENGINEERING**

Syllabus: M.Sc. (Financial Economics) w.e.f. AY 2018-19. Approved by Board of Studies 21-3-2018; Academic Council 28-3-2018



## **Objectives**

The course combines applications of various financial corporate and valuation models with excel. It also provides an in depth understanding of various types of derivative structured financial products. The focus is on using Excel and VBA for pricing and valuation of derivatives, equity linked products and understanding of the latest developments.

### **Module 1: Corporate Finance Models with Excel**

Basic financial Calculations Present Value, Net Present Value, IRR and Multiple IRR, Discounting cash flows, Calculating Cost of Capital, Gordon Model, CAPM, Calculating Cost of Debt, Financial Statement Modelling, Sensitivity procedure, Project Finance Modelling Case study on Building a Model.

### **Module 2: Excel applications for Portfolio Valuation:**

Introduction to portfolio models, Calculating efficient portfolios, Computing Variance Co variance Matrix, Estimating Betas and Security Market Line, The single index model, Black Littermen approach to portfolio optimiization, Event Studies

### **Module 3: Excel applications for Option Valuation:**

Pricing options using binomial trees Programming Binomial Option Pricing in VBA, Log normal Distribution, The Black-Scholes-Merton Model – using VBA to define Black Scholes Pricing Function, Calculating Implied Volatility, Option “Greeks”

### **Module 4: Excel applications for Fixed Income Valuation:**

Discount factors, spot rates, forward rates, and yield to maturity, Modelling Term structure, Arbitrage and the Law of One Price, Hedging and immunization

### **Module 5: Monte Carlo Methods with Excel:**

Monte Carlo Simulation of the Investment Problem, Using Monte Carlo Simulation for Option Pricing, Monte Carlo plain Vanilla Call pricing convergence to Black Scholes

### **Module 6: Value-at-Risk (VaR): Calculation with Excel**

Applied to stock, currencies, and commodities , Applied to linear and non-linear derivatives, and securities with embedded options , Structured Monte Carlo, stress testing, and scenario analysis , simulating data, Bootstrapping , Limitations as a risk measure , Coherent risk measures , Volatility Models

### **Module 7: Excel applications for Credit Derivatives**

Credit Derivative Products – Credit Linked Notes/Collateralized Debt Obligations – Credit Derivatives/Default Risk – Pricing and Modelling – Credit Derivatives – Applications/Markets.

### **Module 8: New Markets**

Inflation Indexed Notes and Derivatives – Alternative Risk Transfer/Insurance Derivatives – Weather Derivatives New Markets – Property; Bandwidth – Macro-Economic and Environmental Derivatives – Tax and Structured Derivatives Transactions.

### **Module 9: Derivatives Trading and Portfolio Management in practice:**

Evolution of derivatives markets – Electronic Markets and Derivatives Trading – Hedging interest rate risks – Individual securities and portfolios – Delta hedging and option portfolio

**Reading List:**

- Simon Benninga, Financial Modelling with Excel, 3<sup>rd</sup> Ed., MIT Press.
- Bill Dalton, Financial Products-An Introduction using Mathematics and Excel, Cambridge.
- Danielle Stein Fairhurst, Using Excel for Business Analysis: A Guide to Financial Modelling Fundamentals, Wiley .
- Day Alastair, Mastering Financial Modelling in Microsoft Excel 3rd Edn: A Practitioner's Guide to Applied Corporate Finance (3rd Edition), FT Press, 2012.
- Das, Satyajit, Structured Products, Vol.1 & 2, Wiley, (Latest Edition).
- Fabozzi, Frank J., Davis, Henry A., Choudhry Moorad (2006), Introduction to Structured Finance, Wiley Finance.
- Stefano, Caselli, Stefano, Gatti (2005), Structured Finance: Techniques, Products and Market, Springer.
- Arnaud de Servigny (2007), Jobst, Norbert (ed.), The Handbook of Structured Finance, McGraw Hill

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**FE-A-115: FINANCIAL RISK MANAGEMENT**

Syllabus: M.Sc. (Financial Economics) w.e.f. AY 2018-19. Approved by Board of Studies 21-3-2018; Academic Council 28-3-2018

**Objectives:** The objective of this course is to introduce financial risk management concepts and techniques that are widely used. The focus is on market risk and credit risk. The course covers the conceptual understanding and practical methods of risk identification, assessment and measurement. It also covers the risk management and control applications with real world examples. By the end of the course, students should be able to use risk measurement techniques and interpret risk profile of a firm.

## **Content**

### **Module 1: Introduction to Financial Risk Management**

Terminologies/Basic tenets of risk management, The meaning of risk, Types of risks – Market, Credit, Operational, Reputational, Legal & Compliance risks, like *fixed income*, *foreign exchange*, *credit and equity*. Risk Identification and assessment need to quantify their risk- For example Capital allocation, Economic Capital Vs Regulatory Capital, implementing suitable risk management strategies etc. ,Overview of risk management process Risk measurement Risk management/control Continual monitoring and feedback, Importance of Management Information Systems (MIS) reporting ,Requirement of Regulatory level risk reporting, Overview of various banking regulations having a bearing on the financial institutions including inter-alia: Basel, CRD IV, Dodd-Frank, Ring-fencing etc.

### **Module 2: Market Risk- Risk identification and assessment**

Analysis of the organization's portfolio and reviewing the asset classes which form a part of this portfolio. Identity the risk factors (eg: interest rate, inflation, equity prices etc.) pertaining to each of the asset classes in the portfolio. Study/Analyse the factors (eg: market liquidity, transaction costs, counterparty risk etc.) which have to be looked into before making the decision to hedge an exposure, Mean variance framework for an organization's portfolio risk, Importance of normal distribution in finance, set correlations and their contribution to portfolio risk, Relation between the increasing number of assets and its contribution to reduction of portfolio un-systematic risk.

### **Module 3: Market Risk - Risk measurement**

Risk measurement parameters commonly used/monitored in market risk management: Portfolio Beta, PV01, Portfolio duration (Macaulay duration, modified duration, effective duration),Key rate duration, Convexity, Spread analysis (Z-spread, Option adjusted spread),Yield curve analysis (concepts of bootstrapping of the yield curve), forward rates, Growing importance of OIS curve. Introduction to modelling in MS Excel: construction of the zero curve, forward rates, basis adjustments to swap curves etc.

### **Module 4: Volatility and Market risk measurement models**

Understanding volatility, Definition and insight into portfolio volatility, Volatility smiles, Introduction to volatility surfaces, Popular methods to measure portfolio volatility followed in the financial industry, Concept of Value at Risk, Types of VaR measures (VaR, incremental VaR, stressed VaR, etc.) Methodologies for measurement of VaR: Variance-Covariance VaR, Historical VaR, Monte-carlo VaR, Calculation of a portfolio VaR, VaR reporting to RBI, Measuring risk using Value-at-Risk, Marginal and relative VaR, Stress testing and back-testing VaR, Conditional VaR and its relevance, Comparison between VaR and cVaR.

### **Module 5: Extreme Values, Quantiles, and Value at Risk**

Value at Risk, Risk Metrics, Econometric Approach to VaR Calculation, Quantile Estimation, Extreme Value Theory, Extreme Value Approach to VaR, New Approach Based on the Extreme Value Theory, VIX –Theory and Application

#### **Module 6: Market Risk - Market Risk Management/Control**

Role of derivatives in market risk management, Forward contracts Futures contracts Options contracts Swaps contracts Using interest rate derivatives (Cap, Floor, Collar etc.) Greeks Analysis: Definitions of various Greeks Greeks measurement and analysis (Delta, gamma, theta, rho) Concept of delta hedging using options, introduction to gamma hedging and vega hedging

#### **Module 7: Credit Risk**

Risk identification and assessment: Introduction to credit risk, Credit risk management process, Risk measurement: Credit risk management strategies – Credit VaR, Analysis of counterparty credit ratings and adjustment of credit spreads in the valuation etc., Market Risk management/control: Introduction to Credit Value Adjustments (CVA) in financial instrument valuations, Credit default swaps (CDS), collateral management

#### **Module 8: Continual monitoring and feedback for market and Credit Risk Management:**

Overview of organizational level policies/procedures, Internal risk reporting, Regulatory risk reporting, Typical MIS reporting in an organization

#### **Reading List:**

- Financial Risk Management: Frank J Fabozzi.
- Financial Risk Management: A Practitioner's Guide to Managing Market and Credit Risk By Steve L. Allen
- Advanced Financial Risk Management: Tools and Techniques for Integrated Credit Risk and Interest Rate Risk Management (Wiley Finance) by Donald R. Van Deventer, Kenji Imai & Mark Mesler

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### **FE-A-116: PROJECT APPRAISAL AND FINANCE**

**Objectives:** The objective of this course is to familiarise the students with the project appraisal types, risk analysis, project financing costing and valuing; it also provides an overview of global project appraisal issues. The course aims at providing an understanding of practical aspects like, project administration, negotiation and preparation of project report.

**Contents:**

**Module 1: An Overview of Project Finance**

Introduction to project finance and overview of the project finance, market, project life cycle and its impact on the feasibility – Project identification and formulation – Different types of needs leading to different types of projects under BMRED (Balancing, Modernization, Replacement, Expansion and Diversification) – Considerations involved in decision under each of these types – Macro parameters in project selection – Different considerations for project under private, public and joint sectors – Project formulation: preparation of project profile, project report and detailed project report – Broad criteria for pre-investment decisions.

**Module 2: Project appraisal**

Different types of appraisal – Technical, economic, organizational and managerial, commercial and financial – Financial techniques for project appraisal and feasibility – discounted cash flow and non-discounted cash flow methods – Social cost benefit analysis and economic rate of return – Non-financial justification of projects.

**Module 3: Project Risk Analysis**

Risk Analysis in Capital Investment Decisions – What is Risk – Types of Risk – Measurement of Risk – Method of Incorporating Risk into Capital Budgeting – Monte Carlo Simulation – Deal structuring through risk identification, assessment & mitigation – Managing Project Risks: How risk management creates value in project finance.

**Module 4: Global Projects - Issues**

A study of World Bank Project Reports, Project Initiation and Resource Allocation – The Importance of a Proper Allocation of Resources – Process of Resource Allocation at the Corporate Level – Process of Resource Allocation at the Business Unit Level – Generation of Project Ideas and Creativity – Political Risk Analysis – Currency Risk Analysis.

**Module 5: Project Financing**

Pattern of financing – Sources of finance – Impact of taxation – Public loans – Small savings – Surplus of public enterprises – Deficit financing – Foreign aid – Public sector project financing – Role of tax planning in project financing – Syndication – Leverage Leases – Various debt instruments and innovative Structures – Equator principles – securitizing project loans – PPP Models of Project Finance – PPP models from Supply and Service Contracts – Management Agreements – Leasing, DBO, BOT, BOO, Privatization – Infrastructure Project Financing Case studies of projects: Hydro-electric project – Thermal-power Project – Irrigation Ports – Urban-Waste Management – Telecom sector.

**Module 6: Project Cost Systems**

Project cost accounting and monitoring – Appointment of contractor and its problems – Labour and equipment costs – Accounting – Codification – Development of cost data – Labour time – Reporting

– Direct measurement of work quantities – Labour cost analysis – Equipment accounting – Activity-based cost accounting – Production rates for estimates – Control of cost – Computer application to cost control – Concepts and uses of Project Evaluation and Review Techniques (PERT) – Cost as a function of time – Project evaluation and reviews techniques/cost mechanisms – Accountant's role in project evaluation and review techniques/cost budgeting – Determination of least cost duration – Post project evaluation.

### **Module 7: Valuing Projects**

Appraising a Project by Discounting and Non Discounting Criteria – Appraising Projects with Special Features – FCF Approach – ERR Approach – Real Options – Issues in valuing long term projects.

### **Module 8: Project Administration**

Progress payments – Expenditure planning – Project scheduling and network planning – Use of Critical Path Method (CPM) – Schedule of payments and physical progress – Time cost trade off – Cash flow preparing – Cash forecast and monitoring of fund and other resources – Control of groups of projects under one administration and associated problems in sharing resources.

### **Module 9: Project Negotiation**

Multiple Projects and Constrains – Conflicts in Ranking of Projects by Different Criteria – Resolution of the Conflict in Ranking – Techniques for Selection of more than One Project from a Group

### **Module 10: Detailed Project Reports**

Preparation of Detailed Project Report – Making Financial Projections.

### **Reading List:**

- Finnerty, John D (2007), Project Financing: Asset Based Financial Engineering, 2nd Ed. John Wiley & Sons Inc.
- Chandra, Prasanna (2006), Projects: Planning, Analysis, Financing, Implementation, and Review, 6th Ed., Tata McGraw Hill.
- Nevitt, Peter K., Fabozzi, Frank J. (2000), Project Financing, 7th Ed. Euromoney Books.
- Benjamin, C. (2003), Modern Project Finance: A Casebook, John Wiley & Sons, Inc.
- Grundy, Tony (2003), Strategic Project Management, 1st ed. PA (I) Pvt. Ltd.

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## **FE-A-117: STATISTICS AND OPERATIONS RESEARCH**

## Objective

The objective of this course is to familiarize students with statistical theory and its application as the foundations for data analysis, as well as to acquaint them with basic and intermediate techniques from the field of operations research. Students at the end of the course should be familiar with the analysis and interpretation of data, along with hands on training in both of these fields.

**Module 1:** Testing of hypothesis: Simple versus composite hypothesis, critical region, type I and type II errors, power of a test, The Decision Rule, trinity of classical tests (Wald test, Lagrange multiplier, likelihood ratio), application of hypothesis testing with known and unknown variances, test for correlation,

**Module 2:** Special Distributions; Introduction, The Poisson Distribution, The Normal Distribution, The Geometric Distribution, The Negative Binomial Distribution, The Gamma Distribution, the Central Limit Theorem

**Module 3:** Estimation and Inference; Introduction, Estimating Parameters: The Method of Maximum Likelihood, the Method of Moments, Interval Estimation, Properties of Estimators, Minimum-Variance Estimators: The Cramér-Rao Lower Bound, Sufficient Estimators, Consistency, Bayesian Estimation.

**Module 4:** Bivariate Distributions; Contingency tables, joint and conditional distributions, odds ratio, test of independence, Analysis of Variance (ANOVA), analysis of covariance.

**Module 5:** Nonparametric Statistics; Introduction, Sign Test, Wilcoxon Tests, The Kruskal-Wallis Test, The Friedman Test, Testing for Randomness, Comparing Parametric and Nonparametric Procedures

**Module 6:** Introduction to OR; Basic algorithms; Linear programming (LP), Graphical and Simplex; LP Formulation and LP with solver and sensitivity analysis; Transportation and transshipment models; Simulation; Decision Analysis

**Module 7:** Advanced algorithms in OR; Goal Programming; Queuing Theory; Networking Models; Markov chains; Data Envelopment Analysis (DEA); Analytical Hierarchical processing (AHP)

## Reading List

- Larsen, Richard J., and Morris L. Marx. (2001): An Introduction to Mathematical Statistics and its Applications. 3rd ed. Upper Saddle River, NJ: Prentice Hall.

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- Lewis Margaret (2011): Applied Statistics for Economists, Routledge.
- Newbold P. (2007): Statistics for Business and Economics (6th edition or later), Prentice Hall
- Sweet, Stephen and Karen Grace- Martin (2008): Data Analysis with SPSS: A First Course in Applied Statistics, Allyn & Bacon, 3rd Edition.
- Field Andy (2013): Discovering Statistics using IBM SPSS Statistics. Fourth Edition, SAGE
- Quantitative Analysis for Managerial Decision Making By Render and Stair
- Operations Research by Hiller and Liberman
- Operations Research by Hamdy and Taha

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### **FE-A-118: BUSINESS ANALYTICS**

#### **Description:**

Syllabus: M.Sc. (Financial Economics) w.e.f. AY 2018-19. Approved by Board of Studies 21-3-2018; Academic Council 28-3-2018



This Learning path enables participants to gain three critical skills: data analysis and problem solving framework, the ability to perform descriptive analytics and visualization, and the expertise to build and implement the most widely used data science and machine learning algorithms in use today, with R

### **Module 1: The need for Analytics and Understanding Analytics**

1. Decision Making – Heuristics and Biases
2. The need for analytics
3. Impact of analytics on business
4. Being analytically competitive
5. The difference between analytics and BI
6. Introduction to the business Analytics model
7. Types of analytics
8. Models and algorithms in Analytics
9. The Analytics Methodology

### **Module 2: Tool and Tech Landscape**

1. A review of technology used in data storage, data processing, and data science
2. Popular tools used in Data Science and when to use each

### **Module 3: Descriptive Analytics with excel and Tableau**

1. An introduction to Tableau
2. Using descriptive statistics in analysis and reporting
3. Advanced reporting with Tableau

### **Module 4: R programming**

1. An introduction to R
2. Importing and exporting data in R
3. Data Manipulation with R
4. Advanced Data Manipulation with R
5. Data Visualization with R

### **Module 5: Data Preprocessing**

1. Data Exploration and Assessment for Data Science
2. Identifying and dealing with noise in Data
3. Preparing data for Data Science Modeling

### **Model 6: Predictive Models in R**

1. Linear Regression Models and their applications
2. Logistics Regression Models and Their applications

### 3. Time Series Forecasting

#### **Model 7: ML Models in R**

1. Clustering Algorithms and application
2. Decision Tree Algorithms and applications
3. Random Forest Algorithms and applications

#### **Model 8: Storytelling with Data**

1. Communicating data science results
2. Effective presentation skills
3. Using Data visualizations for storytelling

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#### **FE-B-101: INTERNATIONAL FINANCE - II**

**Objectives:** This course offers a comprehensive discussion of principles of financial economics to explain how international corporate finance decisions are made in the real world. It particularly tries

Syllabus: M.Sc. (Financial Economics) w.e.f. AY 2018-19. Approved by Board of Studies 21-3-2018; Academic Council 28-3-2018

to address the issues and problems of the international investment management & financing by the firms and multinational corporations in the global financial markets. This course also covers firm level decision making problems like valuation techniques and financing decisions in a cross-border setting, the cost of capital around the world, evaluation of investments in emerging markets, capitalizing on market imperfections while making financial and investment decisions.

#### **Contents:**

##### **Module 1: Long Term Debt and Foreign Exchange Exposure**

Debt Denominated in Foreign Currencies: Eurobonds – Debt and Foreign Exchange Net Cash Flow Exposures – Foreign Exchange Value Exposure – Foreign Exchange Equity Exposure – Hedging – Foreign Exchange Equity Exposure with Foreign Currency Debt – Foreign Exchange Net Cash Flow Exposure Versus Foreign Exchange Equity Exposure–Debt Maturity Estimation of Foreign Exchange Equity Exposure–Currency Swaps–Swap-Driven Financing.

##### **Module 2: Economic Foreign Exchange Exposure**

Economics of Foreign Exchange, Price, and Volume – Compound Foreign Exchange Revenue Exposure – Competitive Foreign Exchange Revenue Exposure – Foreign Exchange Revenue Exposure – Domestic Firm with a Foreign Competitor – Foreign Exchange Operating Exposure of a Foreign Subsidiary with a Foreign Competitor.

##### **Module 3: Global Finance and the Cost of Capital**

Returns on Foreign Assets – Depositary Receipts – Cost of Capital – The Capital Asset Pricing Model – Global Equity Beta and the Cost of Equity – Risk-free Rate – Cost of Debt and the WACC – Systematic Foreign Exchange Risk – Risk-Adjusted Uncovered Interest Rate Parity Operating Risk Approach – Accounting Beta Method – Country Beta Method – Emerging Market Investments – Cost of Capital in a Foreign Country – Unlevering Equity Betas.

##### **Module 4: International Asset Portfolios**

International Equity Portfolios – Composition of Global Equity Market – Techniques of Making International Equity Investments – Calculation of Hedged and Unhedged Return on a Foreign Equity Share – Benefits of Holding a Global Portfolio of Equities – Risk and Return from Foreign Equity Investment – The International Capital Asset Pricing Model – Equity Financing in the International Markets – International Bond Portfolio Overall Composition of the Global Bond Market – Unhedged and Hedged Return on a Bond Portfolio – Active Vs. Passive Hedging of Currency Risk in a Global Bond Portfolio.

##### **Module 5: Financial Management in a Multinational Firm**

Short Term and Long Term Borrowing and Investment – Cash Surplus Management – Centralised vs. Decentralised Cash Management – Cash Transmission – The Central Financial Decisions Multinational Firms Must Make Concerning Capital Structure – Risk Management and Tax Optimization – Decisions Regarding Capitalizing Subsidiaries Around the World – Forming Partnerships with Local Firms – Exposure To Exchange Rates – Tax Considerations Factor Into Internal Financial Decision-Making.

##### **Module 6: International Financial Market Regulation**

Foreign Exchange Management Act (FEMA1999) – Reserve Bank of India Regulation and Guidelines with Respect to External Commercial Borrowings (ECB) – NRI Remittances – Clearing Corporation of India Ltd.(CCIL,2003) – Regulations and Guidelines Regarding International Capital Flows – SEBI

Regulations of FIIs – Foreign Exchange Derivatives and Hedging – Financial Stability and Regulation of Foreign Exchange Flows in India.

**Reading List:**

- O'Brien, Thomas J. (2005), Corporate Decisions in Global Markets, 2nd Ed., Oxford University Press.
- Levi, Maurice D. (2009), International Finance, Routledge.
- Madura, Jeff (2006), International Financial Management, 6th Ed., Thomson Publications
- Choel, S. Eun and Bruce, Risnick (2001), International Financial Management, Tata Mc Graw Hill.
- Mark, N. (2001), International Macroeconomics and Finance, Blackwell Publishers.
- Choi, E. Kwan, Harrigan (Ed.) (2003), Handbook of International Trade, Blackwell Publishers.

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**FE-B-102: BEHAVIOURAL FINANCE**

**Objectives:** This course examines the behavioural strategies that investors rely upon to make decisions, the structure and speculative dynamics of returns in world equity markets (from a psychological perspective), and the practical implications of behavioural finance.

Syllabus: M.Sc. (Financial Economics) w.e.f. AY 2018-19. Approved by Board of Studies 21-3-2018; Academic Council 28-3-2018

## **Contents:**

### **Module 1: Foundations of Behavioural Finance**

Financial Decision Making – The Expected Utility Rule – Frames for Actions – Contingencies and Outcomes – Discounting – The Discounted Utility Model – How and Why Discount Rates Vary – Hyperbolic Discounting Factors – Learning – Rational Learning – Over Inference and Law of Small Numbers – Disagreement – Tastes and Capital Asset Pricing Model – Bubbles – Past, Present and Future – Tulipmania and the Didactic Value of Bubbles – Regulatory Origins of the Bubble.

### **Module 2: Investor Biases**

Overconfidence Bias – Representativeness Bias – Anchoring and Adjustment Bias – Cognitive Dissonance Bias – Availability Bias – Self-Attribution Bias – Illusion of Control Bias – Conservatism Bias – Ambiguity Aversion Bias – Endowment Bias – Self-Control Bias – Optimism Bias – Mental Accounting Bias – Confirmation Bias – Hindsight Bias – Loss Aversion Bias – Recency Bias – Regret Aversion Bias – Framing Bias – Status Quo Bias.

### **Module 3: Asset Pricing under Prospect Theory**

Basics of Prospect Theory – Prospect Theory's Application to Finance – The Cumulative Probability Version of the Prospect Theory – Cumulative Prospect Theory and Asset Pricing – Does Prospect Theory Work

### **Module 4: Overconfidence and Optimism**

A Model of Trading Under Optimistic Investors – Price Setting – Conditions for Overconfident Pricing of the Risky Asset – Pricing in the Odean's Model – The Implications of Odean's Model for Financial Markets – Do Investors Trade Too Much? Optimism in Corporate Finance – Facing Failure – Who Dares Loses? – The Hubris Theory of Takeovers.

### **Module 5: Theories of Overreaction and Underreaction**

The DHS Model – A Model of Investor Sentiment – A Unified Theory of Underreaction – Momentum Trading – and Overreaction in Asset Markets - Empirical Findings – Contrarian Investment – Extrapolation and Risk – Evidence on the Characteristics of Cross-sectional Variation in Stock Returns – Momentum – Market Efficiency and Biases in Brokerage Recommendations.

### **Module 6: The Psychology of Financial Markets**

Herding – Models of Herding – Evidence on Herding and Its Effect – Herding in Investment Advice – Equity Premium Puzzle – Explaining the Risk Premium by Myopic Loss Aversion – Can Loss Aversion Explain the Puzzle? – Is Loss Aversion Irrational – Dividends–The Irrelevance of Dividends to Value – Prospect Theory Explanation of Dividend Payments – Who Pays Dividends and Why?

### **Module 7: Stock Valuation and Style Investing**

Keynes' Beauty of Competition – The (Ir)relevance of Fundamentals – Valuation and Behavioural Biases – Cost of Capital, Factors from Limited Arbitrage – History – Life Cycle of an Investment Style – Value Vs Growth – Risk or Behavioural? – Style Rotation – Potential Gains to Style Rotation – Timing the Switch.

## **Module 8: Efficient Markets Hypothesis and the Behavioural Finance**

Are Financial Markets Efficient – Theoretical and Empirical Foundations and Challenges of EMH – Analysts' Conflicts of Interest – Evidence of Conflict of Interest – Regulating Conflicts of Interest – Insider trading – The Distributional Impact of Insider Trading – The Hirshleifer, Subrahmanyam and Titman Model – Insider Trading – Stock Options and Construction of Earnings – Consequence of Insider Trading for Outsiders.

### **Reading List:**

- Forbes, William, (2011), Behavioural Finance, Wiley- India Edition.
- Shefrin, Hersh, (2005), A Behavioral Approach to Asset Pricing, Elsevier Academic Press.
- Montier, James, (2002), Behavioural Finance- Insights into Irrational Minds and Markets, John Wiley & Sons, Ltd.
- Montier, James, (2007), Behavioural Investing- A Practitioner's Guide to Applying Behavioural Finance, John Wiley & Sons, Ltd.
- Pompian, Michael M. (2006), Behavioral Finance and Wealth Management- How to Build Optimal Portfolios That Account for Investor Biases, John Wiley & Sons, Inc.
- Thaler, Richard H. (2005), Advances in Behavioral Finance- Volume II, Russell sage foundation, New York.
- Shleifer, Andrei. (2000), Inefficient Markets- An Introduction to Behavioral Finance, Oxford University Press.

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## **FE-B-103: COMMERCIAL BANKING**

**Objectives:** Introduction of financial sector reforms have drastically changed the structure of Indian banking and induced competition which not only improved profitability and efficiency of banks but also led to innovation in products and services that the banks offer. The objective of this course is to

acquaint the students with the whole gamut of banking operations and also help them become a very successful bank manager, in case they choose banking as a career.

### **Module 1: Overview of workings of Commercial Banks:**

Types of Banks and their Functions, Scheduled banks, Commercial banks, Public sector banks, private sector banks (old and new generation banks), Co-operative banks, RRBs, Local area banks, NBFCs, Mutually aided co-operative societies], Deposit Products - services rendered by Banks, Fixation of Bench mark Prime lending Rate; and New Base Rate Mechanism, Concepts of Retail Banking, Corporate Banking, (Wholesale Banking); SME Banking, Retail Loans segment and Requirements of SMEs, Rural Banking, Cooperative, Nationalized Banks, RRBs, NABARD Micro Finance, Wealth Management (Private banking), Treasury management, Cash management services, Merchant banking, International banking, Fund based and Non Fund based Activities, Letters of credit and types of LCs, Bank guarantees, Solvency certificates, etc. Sources and uses of funds in banks, Basic structure of Bank Balance sheet

### **Module 2: Analysis of Corporate Financial Statements**

Overview of Credit Management, Role of RBI Guidelines in Bank's Credit Management, Purpose of Analysis of Financial Statements by Bankers Rearranging the Financial Statements for Analysis, Techniques used in Analysis of Financial Statements. Working Capital Finance, Concept of Working Capital, Working Capital Cycle, Methods of Assessment of Bank Finance, Bills/Receivables Finance by Banks, Term Loans, Important Points about Term Loans, Deferred Payment Guarantees, Difference between Term Loan Appraisal and Project Appraisal, Credit Delivery, Disbursal of Loans

### **Module 3: Credit Risk Management & Credit Rating**

Meaning of Credit Risk, Factors Affecting Credit Risk, Steps taken to Mitigate Credit Risks, Credit Ratings, Internal and External Ratings, Methodology of Credit Rating, Use of Credit Derivatives for Risk Management, Credit Default/Stressed Assets/NPAs, Wilful Defaulters, Options Available to Banks for Stressed Assets, RBI Guidelines on Restructuring of Advances by Banks, Corporate Debt Restructuring (CDR) Mechanism

### **Module 4: International Banking**

Foreign Exchange Dealing Room Operations, RBI/FEDAI Guidelines, Definition of Risk and Risks in Foreign Exchange Operations, Management of Risks and Guidelines on Risk Management, Letters of Credit, Risks Relating to LC Transactions, Facilities for Exporters and Importers, Export Finance, Exporters Gold Card Scheme, Forfaiting and Factoring, Exchange and Trade Control Guidelines for Importers Trade Credit – Supplier's Credit and Buyer's Credit Risks in Foreign Trade – Role of ECGC, Role of EXIM Bank, RBI, Exchange Control of India – FEMA and FEDAI and Others, ECB, ADRS/GDRS and FCCB

### **Module 5: Risk Management**

Risk and Basic Risk Management Framework, Risks in Banking Business, Risk Identification in Banking Business, Off-Balance Sheet Exposures, Risk Regulations in Banking Industry, Basel I ,II and III , Market Risk, Risk Identification, Risk Measurement, Risk Monitoring and Control, Risk Reporting, Managing

Trading Liquidity, Risk Mitigation, Credit Risk, Credit Risk Management Framework, Securitization, Credit Derivatives, Operational Risk and Integrated Risk Management

### **Module 6: Treasury and Asset Liability Management**

Functions of Integrated Treasury, Evolving Role of Treasury as a Profit Centre,. Treasury Products in Foreign exchange market , money market, security market and global markets Meaning of Asset-Liability Management (ALM), Liquidity Risk vs. Interest Rate Sensitivity Risk, Role of Treasury in ALM, Use of Derivatives in ALM Treasury and Credit Risk and Credit Derivatives, Transfer Pricing, Policy Environment: Integrated Risk management Components of Assets and Liabilities in Bank's Balance Sheet and their Management, ALM as Coordinated Balance Sheet Management, Capital and Banking Regulation, III. Capital Adequacy , Asset Classification and Provisioning Norms, Liquidity Management, Measurement of Interest Rate Risk, Interest Rate Risk Measurement Techniques, Strategies for Controlling Interest Rate Risk ,Controls and Supervision of Interest Rate Risk Management, Profit Planning

#### **Reading List:**

- Contemporary Banking in India, Ed. Naina Lal Kidwai, 1st Ed. Business World.
- Machiraju, H. R. , Modern Commercial Banking ,New Age International, (2008)
- Sinkey, Joseph, Commercial Bank Financial Management , Prentice Hall; 6 edition ( 2002)
- Freixas, Xaviar, Microeconomics of Banking, 2nd Ed. MIT Press.
- Chorafas, Dimitris N., Handbook of Commercial Banking, Palgrave Macmillan. , (1998).
- Gup, Benton E. Kolari , James W., Commercial Banking: Management of Risk, Wiley; 3 edition (2004).

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### **FE-B-104: DEVELOPMENTAL FINANCE**

**Objectives:** This course aims at providing an in depth discussion of various aspects and issues related to development finance. It provides an understanding of project appraisal and social cost benefit

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analysis. The focus is on the latest sources of developmental finance including microfinance and sovereign wealth funds.

### **Contents:**

#### **Module 1: Overview of Development Finance**

Background on Financing for Development Issues – Difference between development finance, social finance and conventional finance – Problems of Development Finance – Introduction to the agencies involved Government – Multi National – Organizations – International Financing – NGOs –Agencies involved – Recent trends Developing country Problems.

#### **Module 2: Project Appraisal for a Developmental Project**

Social cost Benefit analysis – How it differs from the private cost benefit analysis – Issues and problems – shadow pricing – methods of social cost benefit analysis.

#### **Module 3: Government Financing of Development**

Resources –Taxation – Public expenditure and deficit – Public debt – Issues related to India

#### **Module 4: NGOs as Financing Agencies, Fundamentals of NGOs**

Meaning and Definition – Role of NGOs – Types of NGOs and History of NGOs in India – NGOs and the State: Withdrawing of the State and Expanding Role of NGOs – Role of NGOs in Socio-Economic Development – Sustainability of NGOs and Globalisation – Non-Profit Financing Sources – Structure and Management – Sustaining the Social Development Partnership – International Agencies Supporting NGOs and NGOs of India Donor Agencies – World Bank, Asian Development Bank, Melinda and Gates Foundation, SEWA, PRADHAN, Disha, Asha, CINI, Seva Mandir, MYRADA.

#### **Module 5: Inclusive Credit Policies for Developing Economies**

Microfinance trends: development, contribution, problems – Strategic Issues in Microfinance Sustainability, Effective Interest Rates for micro credit – National Development Banks and other “inclusive” credit policies: Types, contribution, problems – Structured Finance and Private Investment in Infrastructure: trends, contribution, problems.

#### **Module 6: New Sources of Developmental Finance**

Sovereign Wealth Funds and Foreign Reserve Accumulation

### **Reading List:**

- Addison, Tony, McGillivray, Mark, and Mavrotas, George, (Ed.) (2005) Development Assistance and Development Finance. UNU-Wider.

- Giles, Susan L., Blakely, Edward J. (2004), Fundamentals of Economic Development Finance, Sage Publications.
- Stiglitz, Joseph (2000), The Economics of Public Sector, W.W. Norton & Co.
- Atkinson, A. B. (Editor) (2004), New Sources of Development Finance, Nuffield College, Oxford University.
- Ledgerwood, J. (2001), Microfinance Handbook: An Institutional and Financial Perspective, World Bank Publications
- Armendáriz, B. and Morduch, J. (2005) The Economics of Microfinance, The MIT Press.
- Truman, Edwin M., (2010), Sovereign Wealth Funds: Threat or Salvation? Peterson Institute.

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## **FE-B-105: STRATEGIC FINANCE & INVESTMENT BANKING**

**Objectives:** The objectives of this course are to provide a comprehensive background of financial restructuring and mergers and acquisitions. The course aims at imparting a strong conceptual

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foundation in investment banking with focus of various modelling techniques like cash-flow, LBO modelling and mergers and acquisitions modelling, it also provides an understanding of investment banking processes and best practises. The focus is on strategic perspectives, valuation methods and financing structures.

### **Contents:**

**Module 1: Valuation Concepts for Mergers and Acquisitions:** Valuation and Pricing of a company – Modes of Valuation Earnings basis Asset basis Discounted Cash Flows (DCF) DCF valuation, and frequently encountered errors in practical implementation – Return on Investments (ROI) – Return on Equity (ROE) – Estimating synergy values – Relative Valuation

**Module 2: Broad Overview of Financial Restructuring:** Changing shape of the corporates Forms of Business Alliances – Strategic Choice of Type of Business Alliance – Merger and Acquisition and Takeover – Introduction to restructuring problems – Types of mergers – Reasons for Mergers and Acquisitions: Vertical, Horizontal, Conglomerate, Concentric Mergers – Circumstances in which financial restructuring takes Place - Factors Governing the M&A Process in India - Developments in the competitive environment History of Mergers – The first to the fourth wave and causes thereof

**Module 3: Mergers & Acquisitions- Strategic Perspectives:** The different motivations for business acquisition – The principles of acquisition search – SWOT Analysis of the company Identification of the Target Company – Due Diligence Inquiry Selection of methods for merger or takeover Procedures and Processes in an M&A – Step-by-step approach Defining and Selecting Target – Pricing of Mergers (Pricing the Competitive Bid for Take-over) – different forms of M&A activity – Negotiation/Approach for Merger – Acquisition and Take-over Contracting – Implementation of Merger and Acquisition – M&A statistics Managing Post-Merger Issues – Winner's curse Ethics in M&A.

**Module 4: Merger (Acquisition) Modelling:** Uses for a Merger Model – How to build a Merger Model – Calculation of Equity Value and Purchase Price – Explanation of Consideration used in Purchase (stock, cash, assumed debt) – Discussion of Multiples Paid – Post-Merger Control Issues – Synergies and pre-tax Synergies required to breakeven – Revenue and EBITDA contribution – Proforma Income Statement – EPS Dilution for Acquirer – Discussion of Goodwill – Other accounting treatment issues – Sensitivities.

**Module 5: Complete LBO Modelling:** Uses for An LBO Model on Sell-side and Buy-side – Review of LBO Model Structure – Purchase Price Calculations and Considerations – Capital Structure Options / Reviews – Discussion of Typical Financing Sources for LBO – Creation of a Sources and Uses Worksheet – Proforma Income Statement, Balance Sheet, Cash Flow – Goodwill Calculation – Integration of Income Statement, Balance Sheet, Cash Flow – Debt and Interest Schedule – Revolver and mandatory / option debt prepayment and impact on returns – Returns Analysis - IRR on debt, hybrid instruments and equity investments.

**Module 6: Investment Banking Process and Best Practices:** Conclusion of Financial Modeling – Investment Banking Process – M&A and Private Placement – Investment Bank – Industry Overview – Market Overview – Client – Valuation– Process – Buyer/Investor Descriptions – Financing – Investment Bank – Industry

**Reading List:**

- Weston, Fred, Mitchell, Mark L. and Mulherin, Harold (2004), Takeovers, Restructuring, and Corporate Governance, 4th Ed. Pearson.
- Reed and Reed Lajorex (1999), The Art of Mergers & Acquisitions, McGraw Hill.
- S. Ramanujam (2000), Mergers et al., Tata MacGraw Hill.
- Sridharan and Pandian (2002), Guides to Takeover and Mergers, Wadhava Publications.
- Weston, Sen and Johnson (2003), Takeovers, Restructure and Corporate Governance, Prentice Hall.
- Gaughan, Peirick A. (2003), Mergers, Acquisitions and Corporate Restructuring, John Wiley & Sons.
- Liaw, K. Thomas (1999), The Business of Investment Banking, J. Wiley & Sons.
- Fleuriot, Michel (2008), Investment Banking Explained: An Insider's Guide to the Industry, McGraw-Hill.
- Joshua, Rosenbaum, Joshua, Pearl (2009), Investment Banking: Valuation, Leveraged Buyouts, and Mergers & Acquisitions, Wiley Finance.
- Stowell, David (2010), An Introduction to Investment Banks, Hedge Funds, and Private Equity: The New Paradigm, Elsevier

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**FE-B-106: MARKETING OF FINANCIAL SERVICES**

**Objectives:** The objective of this course is to introduce students to the concepts and techniques of service marketing. The course is designed to cover all-important aspects of marketing of services,

increase students understanding of marketing practices and strategies as applied in the service sector.

## **Contents:**

### **Module 1: Financial Products and Services**

Introduction to the entire product spectrum of financial services – Business logic, and how they converge and compete with one another and the value addition by specific financial services – Classification of financial products into Core Product — Banks' savings/current accounts, term deposits, insurance- life and general insurance, pension, all other value added services as unique selling points (USP's).

### **Module 2: Marketing the Financial Products and Services**

Difference between Marketing financial services and marketing physical goods and marketing other services – Transfer of Information vs. Transfer of Physical Goods – Role of IT in marketing financial services - Relational Transactions vs One-Time Transaction

### **Module 3: Regulatory Environment and Evolution of the Financial Services Industry (FSI)**

The issues and environmental forces that shape the financial services marketplace – Main features and sectors of the FSI – Marketing norms and regulations for various financial sector entities like insurance companies, NBFCs, Banks etc Regulatory guidelines by SEBI,IRDA and RBI for marketing of respective financial products in India.

### **Module 4: Market Segmentation, Targeting and Positioning in the FSI**

Need for Segmentation – Segmentation Approaches – Segmentation Bases Target – Market Selection – Undifferentiated Marketing – Differentiated Marketing – Concentrated Marketing – Positioning – Organizational Positioning in Financial Markets – Need for Customer Service – Ways of Improving Customer Service – Dimensions of Service Quality.

### **Module 5: Consumer Behaviour in the FSI**

Consumer behaviour in the various financial services sectors – Retail and Commercial FS Customer focus in marketing financial products Consumer Behaviour Factors – Affecting Financial Services – Buyer Behaviour – Consumer Behaviour – The Life Cycle approach – A Situational Approach Strategy Marketing at the Corporate Level – The Role of Marketing Research Market Analysis Information – Importance of Customer Relations management (CRM)in Marketing Financial Products – CRM Concepts – Customer Knowledge – Customer Loyalty – Customer Switching

### **Module 6: Financial Product Designing and Launching in the FSI**

The critical factors in product development and product launching – The concept of service product – Product Management – Levels of a Product Factors – Influencing Product Strategies Product Mix Strategies – Branding in Financial – Product development and launching in various financial services.

### **Module 7: Distribution of Financial Products and Services**

Concept of Distribution – Crucial components in the delivery of financial services – Multiple delivery channels – Promotion – Marketing information & research – Public relations and publicity – Image building – The cost of delivery – Role of information technology – Product pricing in various FS sectors – Relationship and Database Marketing – Globalization and its impact on financial services.

**Reading List:**

- Estelami, Hooman (2006), Marketing of Financial Services, Dog Ear Publishing LLC.
- Farquhar, Jillian and Meidan, Arthur (2010), Marketing of Financial Services, 2nd Ed. Palgrave MacMillan.
- Pezzullo, Mary Ann (1998), Marketing Financial Service, American Bankers Association.

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**FE-B-107: TAXATION**

**Objectives:** This course offers an understanding of tax implications for the managerial decisions. The focus is on various direct and indirect taxes in India and their relevance in corporate decision making.

**Contents:**

Syllabus: M.Sc. (Financial Economics) w.e.f. AY 2018-19. Approved by Board of Studies 21-3-2018; Academic Council 28-3-2018

**Module 1: New Industrial Establishment and Tax Planning:** Direct Tax planning –Tax planning vs. tax evasion – Tax management – Tax implications in planning – The legal status of business unit, firm, private limited company and public limited company – Tax planning in respect of different heads of income – Tax implications in International Joint Venture – Tax aspects of mergers and amalgamations.

**Module 2: Tax Considerations Arising with Regard to Specific Management Decisions:** Such as - Make or buy – Own or lease – Retain or replace –Repair of scrap or return –Export versus local sale – Shut down or continue – Expand or contract – Merger and acquisition – New capital investment – Tax exemptions – Various deductions under chapter VI.

**Module 3: Tax Incentives and Export Promotions:** Tax aspects of investments – Tax implications in developing capitalisation structure – Short term loans – Deposits from public – Term loans – Bonus issues – Dividend policy.

**Module 4: Corporate Income Tax:** Tax concession and incentives for corporate decision–Tax planning for depreciation–Treatment of losses & un-absorbed items–Carry forward and set off losses–Tax and business reorganization: merger and amalgamation Tax.

**Module 5: Wealth Tax Planning:** Individual, companies etc. and tax planning – Wealth tax on closely held companies – Valuation of assets – Filing of returns – Assessment – Appeals – Review – Revision and Rectification.

**Module 6: Central Excise Act:** Central Excise – Nature and contemporary legislation for the same – Liability for the central excise – Definitions – Goods, manufacture, excisable goods, manufacturer, job worker – Classification of goods – Determination of Tariff Headings – Valuation of goods – Transaction value – Administrative structure of Excise Department – Various procedures – Registration, Self-removal under invoice, manner & payment of duty, provisional assessment, return of goods, private records, returns, electronic records & returns, export without payment of duty, export under claim for rebate, bonds & letter of undertaking, show cause notice, adjudication, interest, penalty, confiscation, seizure, duty payment under protest, refunds, appeals, excise audit – CENVAT Credit – Concessions for SSI units - Introduction to Service Tax.

**Module 7: Customs Act:** Customs Duty – Nature and contemporary legislation – Taxable event for import and export of goods – Types and rates of custom duties – Valuation of goods – Procedures for import and export, manual and electronic documentation, baggage, courier and postal imports and exports – Duty Drawback – Deemed Export – Exemptions from duty – Remission and refund of duty – Demands and appeals – Customs House Agents.

**Module 8: Sales Tax Act:** Central Sales Tax – Definitions – Goods, dealer, business, interstate sale, sale inside a state, sale during the course of import or export, declared goods – Exemptions for High Seas Sale, Penultimate Sale, Subsequent Inter-state sale by Transfer of Documents, Branch Transfer – Liability under CST – Procedural aspects regarding registration, records, returns, payment, assessments, interest, penalties, refunds and appeals – Rates of tax under CST.

**Module 9: Maharashtra Sales Tax:** Liability for tax – Provisions for purchase tax, turnover tax, resale tax – Calculation of set-off – Procedural aspects regarding registration, Maintenance of records,

returns, payment of tax, assessment, interest, penalties, refunds – Package scheme of incentives 1993 – Works Contract Tax and Lease Tax.

**Reading List:**

- Date, V. S., Indirect Taxes (Latest Edition).
- Bare Acts and rules of the relevant taxes.
- Indirect Tax Laws by Taxman (Latest Edition).
- Gururaj, B.N. (2010-2011), CENVAT on Goods and Services.

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## **FE-B-108: INSURANCE ECONOMICS**

### **Objectives**

This course aims at providing a comprehensive understanding of economics of life assurance including the concept of risk, legal aspects of life insurance, life insurance mathematics, construction of life tables, asset management by life insurance firms, underwriting and reinsurance. This course also aims at providing a comprehensive understanding of various aspects of general assurance. The focus is on the concept of risk, legal aspects of general insurance, various classes of general

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insurance, pricing and financing, general insurance underwriting and reinsurance

## **Contents**

### **Module 1: Practice Insurance –Life and General**

Classification of Insurance – Types of Life Insurances – Need Levels – Term Life Insurance – Increasing / Decreasing Term Policy – Whole Life Insurance – Endowment Insurance – Money Back Endowment Plan – Marriage Endowment Plan – Educational Annuity Plan – Children Deferred Assurance Plans – Annuities. Group Insurance – Nature of Group Classification of Insurance Life Vs General – Types of General Insurance – Fire – Marine – Motor – Engineering – Aviation and Agricultural – Insurance of Property – Pecuniary interest – Liability and person – Insurance professionals and intermediaries – Economic Principles of Insurance – Sharing – Subrogation – Contribution

### **Module 2: Legal Aspects of Life Assurance& General Insurance**

Legal Principles of Insurance – The Indian Contract Act, 1872 – Insurable Interest – Nomination and assignment Life Insurance Contracts – Basis of Contract Wagering Contracts – Modification of the principle of indemnity in Life Insurance – Human Life Value Concept – Legal Implications The Indian Contract Act, 1872 – Insurable Interest – Nomination and assignment – Utmost good faith – Indemnity – Subrogation – Contribution – Proximate cause – Insurance Legislation – General Insurance Business (Nationalization) Act 1972 – The Insurance Act 1938 (as amended)

### **Module 3: Mathematics of Insurance**

Elements of compound interest – Accumulated value and present value – Nominal and effective rates of interest – Immediate annuities certain and deferred annuities certain – Perpetuities – functions included in compound interest tables and their uses – Redemption of loans – Sinking funds – Average interest yield on the fund of a life office – Elementary theory of profitability – mortality table – Concept of stationary population – Expectation of life – Select Rates.

### **Module 4: Financial management of Life Assurance& General Insurance**

Financial Principles – Premiums Claims pattern Life and General nature construction – Characteristics and uses of mortality tables – Mortality of Indian assured lives **Pricing and Financial Management of General Insurance**  
Bonus / Malus methods of premium calculation – Return of premium – Premium funds – Investments – Reserves – Surplus – Valuations of Surplus

### **Module 5: Insurance Underwriting**

Need for purpose of selection – Underwriting policy in relation to the objectives of an insurer –Factors affecting–Financial underwriting – Theory of rating – Actuarial Principles – Mortality Tables – Physical and Moral Hazard – Representations – Warranties – Conditions – Risk appraisal – Risk Selection – Underwriting. General Insurance Underwriting, Underwriting Practice in India and Other Important Insurance Markets

### **Module 6: Investments – Life Office Valuations**

General principles – Policy values – Retrospective and prospective methods of valuation of liabilities

– Different methods of valuation – Concept of estate and trading profit special reserves and adjustments in the valuation – Sources of surplus – Methods of distribution of surplus – Reserves – Concept of profitability Surplus – Valuations of Surplus Life Insurance Accounting – Legislation – Procedures – Investments

### **Module 8: Reinsurance**

Concept and Methods – Reinsurance in India

#### **Reading List:**

- Black, Kenneth Jr., Skipper, Harold D. Jr. (1993), Life Insurance, 12th Ed. Prentice hall.
- Black, Kenneth Jr., Skipper, Harold D. Jr. (1999), Life & Health Insurance, 13th Ed. Prentice Hall.
- Zartman, Lester W. (2003), Yale Readings in Insurance: Life Insurance, William S. Hein & Co.
- Dionne, Georges & Harrington, Scott E. (1991), Foundations of Insurance Economics: Readings in Economics and Finance, Huebner International Series on Risk, Insurance and Economic Security, Springer.
- Bates, Ian & Atkins, Derek (2009), Management of Insurance Operations, Global Professional Publishing.
- Gastel, Ruth, (Ed.) (2004), Reinsurance: Fundamentals and New Challenges, Insurance Information Institute.
- Insurance Institute of India, Books on various aspects of Life Insurance (IC-22 to IC 26, IC-81, IC-85), Insurance Institute of India (latest Editions).
- Rejda, George E. (2010), Principles of Risk Management and Insurance, 11th Ed., Prentice Hall.
- Connolly, Sean (2010), Insurance, Amicus Publishing. National Insurance Academy (2009), Practical Approach to General Insurance Underwriting, Cengage Learning India
- Insurance Institute of India, Books on various aspects of General Insurance. IC51 to IC54, IC-71, 72, 73, 74, 77), Insurance Institute of India, (Latest Editions)

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### **FE-B-109: LAW AND ECONOMICS - I**

#### ***PREAMBLE:***

The hallmark of the new interdisciplinary field of law and economics is the application of the theories and empirical methods of economics to the legal system across the board, for example, the common law fields such as torts, contracts, property, etc. In fact, Ronald Coase's paper on "The Problem of Social Cost" (1960), Guido Calabresi's article on "Some Thoughts on Risk Distribution and the New Law" (1961), and the work of Alchian on "Some Economics of Property

Rights" (1961) had applied the methods of economics to some of the areas of law. One endeavor, which is gaining momentum and respectability, is the application of economic analysis to legal problems. The works of Richard Posner's book on *Economic Analysis of Law* (1972) widely contributed to the introduction of the Law and Economics course. In addition, the economic analysis of law has extended to non-market behaviour, particularly influenced by the theoretical framework of Gary Becker on the economic analysis of crime, racial discrimination, and marriage and divorce.

Economics provides a scientific theory to predict the effects of legal sanctions on behavior. In addition to a scientific theory of behaviour, economics provides a useful normative standard for evaluating law and policy. Laws are not just arcane technical arguments. They are instruments for achieving important social goals. In order to know the effects of laws on those goals, judges and other law-makers must have a method of evaluating effects of laws on important social values. Economics predicts the effects of policies on efficiency and distribution. Economic analysis often takes for granted such legal institutions as property and contract, which dramatically affect the economy. For instance, the absence of secure property and reliable contracts paralyses the economies of some nations in third world. Economist, besides substance, can learn techniques from lawyers. For example, economists frequently support the merits of voluntary exchange, but they do not have a detailed account of what it means for exchange to be voluntary. In case of contract law, it has a complex and well-articulated theory of violation. So the economists, to find their models closer to reality, will have to listen to what the law has to teach them.

The benefits of interdisciplinary study can be had only when lawyers learn economics and economists learn something about law. Module 1 is an introduction to the concepts of economics as well as law. Modules 2 to 6 will focus on economic analysis of property law, contract law, tort law, and criminal law. Finally, Module 7 will put emphasis on competition law. Overall the course deals with the explanation of established links between the subjects of Economics and Law, and development of efficient rules and regulations.

### **Module 1: Introduction to Law and Economics**

Economic Analysis of Law: An Introduction

Why do economists need to be concerned about law? - Relationship between law and economics  
Economic Concepts and their relevance to Law

Legal Concepts - The Common Law and the Civil Law Traditions, Introduction to Judicial System in India, Economic Approach to Legal Rules, Methodological Aspects of Legal Rules, Efficiency, Justice and the inherent rationality of Private Law, Development of efficient Rules: Selected Cases

### **Module 2: Economic Analysis of Contract Law**

Introduction - Economic Theory of Contract - Perfect Contracts, Imperfect Contracts

Economics of Remedies for Breach of Contract - Expected Damages, Opportunity Cost, Reliance Damages, Restitution, Specific Performance

Differences between Contracts and Torts - The Foreseeability Rule in Contract Law, Pure Economic loss in Torts

### **Module 3: Economic Analysis of Tort Law**

Introduction, Economic Theory of Torts Law - Accident Costs and their minimization, Liability Rules, Negligence, Contributory Negligence, Comparative Negligence, Strict Liability, Economics of Tort Liability - Liability v. Regulation, Causation in Torts, Joint and Multiple Liability, Product Liability: Producers' Responsibility, and Consumer Protection through Consumer Courts, Environmental Liability, Immaterial Damages: Pain and Suffering

#### **Module 4: Economic Analysis of Property Law**

Introduction, An Economic Theory of Property, Economics of Property Law - Market strategies, Non- market strategies, Allocation of Property Rights - First come first served, Good faith purchase, Title to Land, Establishment of entitlements - Property Rule, Liability Rule, Inalienability Rule

#### **Module 5: The Coase Theorem**

Externalities, Transaction Costs, Efficiency Hypothesis & Invariance Hypothesis.

#### **Module 6: Economic Analysis of Criminal Law**

Introduction, Principal Types of Crime, Optimal Criminal Sanctions: Economics of Crime and Punishment, Criminal Intent, The Defence of Necessity, The Economics of Organised Crime

#### **Module 7: Economic Analysis of Competition Law**

Introduction, Economic Theory of Competition Law - Workable Competition: Structure- Conduct- Performance, Competition as Dynamic Process, Reappraisal of Price Theory - Vertical Restraints: Vertical Price Fixing, Predatory Pricing: Lowering Prices, Control of Concentration: Collusion, Transaction Cost Approach, Theory of Contestable Markets, Applications to USA and EC Competition Policy

#### **Module 8: Competition Policy in India**

Monopolies and Restrictive Trade Practices Act, and Competition Policy Report, Divestment of Public Sector Units and Deregulation, Regulated Competitions and Regulatory Authorities (Power, Telecom, Insurance, Banking)

## BASIC READING LIST

- Posner Richard A – Economic Analysis of Law (7<sup>th</sup> Edition 2007)
- Cooter Robert & Ulen Thomas- Law and Economics (5<sup>th</sup> Edition 2007)
- Shavel Steven – Foundation of Economic Analysis of Law (2004)
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- Landes Williams, Posner Richard - The Economic Structure of Intellectual Property Laws (2003).
- Mercuro Nicholas, Medema Steven G. – Economics & the Law- Second Edition (2006)
- Baird, Gentner & Picker – Game Theory & the Law (1994)

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89, 1989, pp.1618-1691.

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1985, pp. 89- 117.

Gary Becker, S. "Crime and Punishment: An Economic Approach", *Journal of Political Economy*, Vol. 76, 1968.

- Murali Prasad Panta, "The relative efficiency of Liability vs. Regulation in providing incentives to the tortfeasor" *Journal of the Indian Law Institute*, 41, (3&4), pp.405-428, 1999.
- Niskanen, W. A. "Bureaucrats and Politicians", *Journal of Law and Economics*, Vol. 18, 1975, pp. 617- 641.
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- Wadhwa, D. C., "Guaranteeing Title to Land- A Preliminary Study", *Economic and Political Weekly*, October 14, 1989, pp. 2323- 2334.

### **Additional Reading List.**

- Alchian, A. A. & "Production, Information Costs, and Economic Organisation", Demsetz, H. *American Economic Review*, Vol. 62, 1972, pp. 777- 795.
- Ayres, I. & Gertner, R., "Filling Gaps in Incomplete Contracts: An Economic Theory of Default Rules", *The Yale law Journal*, 1989, pp. 101- 107.
- Calabresi, G. & Klevorick, K. A., "Four Tests for Liability in Torts", *Journal of Legal Studies*, Vol. 14, No. 3, December 1985, pp. 585- 627.
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- "The Corporate Contract", *Columbia Law Review*, Vol. 89, 1989, pp. 1416- 1448.
- "Mandatory Disclosure and the Protection of Investors", *Virginia Law Review*, Vol. 70, 1984, pp. 717- 753.
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- Jensen, M. C. & Meckling, W. H., "The Theory of Firm, Managerial Behaviour, Agency Costs, and Ownership Structure", *Journal of Financial Economics*, Vol. 3, 1976, pp. 305-360.
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- “A Theory of Negligence”, *Journal of Legal Studies*, Vol. 1, No. 1, 1972, pp. 29- 96.
- "An Economic Theory of the Criminal Law", *Columbia Law Review*, 1985.
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- Sen Amartya, "The Possibility of Social Choice", *American Economic Review*, Vol.89 (3), 1999, pp. 349- 378.
- Shavell, Steven “A Model of the Optimal Use of Liability and Safety Regulation”, *Rand Journal of Economics*, Vol. 15, No. 2, summer 1984, pp. 271- 280.
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- “An Analysis of Causation and the Scope of Liability in the Law of Torts”, *Journal of Legal Studies*, Vol. 9, No. 3, June 1980, pp. 463- 516.
- "Criminal Law and the Optimal Use of Non-monetary Sanctions as a Deterrent, *Columbia Law Review*, Vol. 85, 1985.
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- Wittman, Donald, “Prior Regulation Versus Post Liability: The Choice Between Input and Output Monitoring”, *Journal of Legal Studies*, Vol. 6, No. 1, pp. 193-211.
- Wright, W. Richard, “Causation in Tort Law”, *California Law Review*, Vol. 73, No. 6, 1985, pp. 1735- 1828.

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## **FE-B-110: LAW AND ECONOMICS - II**

### **PREAMBLE**

The primary aim of this enlargement is to develop greater applied research of legal system from economic view point and also build up the Indian experience based slant to the discipline of “Law and Economics”. This course will provide not only deeper and more complex view of the subject, but also afford to take up meaningful researches in specific type of law that has immense economic bearing and implications. In particular, this course will be dealing with Indian Environmental Laws, land related legislations (including land acquisition, town-planning, SEZ) and corporate laws. This will enable more all-round perspective of the subject with rich empirical analysis. It also deals with vital areas of concern, namely economics of litigation, economic costs of “administering or not administering justice”, question of backlog of cases, alternative procedures of administering justice. Similarly, the economic analysis of law making process, machinery and its efficiency will be a distinguishing feature of this course.

**Module 1: Economic Theory of Legislation:** Legislative process, Delegated legislation, Precedents, Rules v/s Standard, Interpretation of Statute

**Module 2: Economic Analysis of Litigation:** Rules of procedure, Rules of Evidence, The adversarial and inquisitorial trial mode, Alternative dispute resolution (ADR), Lok Adalat, Arbitration, Conciliation and mediation, Settlement, Appeals and error correction, Cost of litigation, Case load and Court Delay Crisis

**Module 3: Economic approach to Contract law in India:** Contract Act, Specific Relief Act, Court approach to formation, validity, performance, interpretation, breach of contract and remedies for breach

**Module 4: Economic Approach to Environmental Protection Laws:** Environmental protection laws and Court decisions, Principles and doctrines evolved by Supreme Court for protection of Environment, Air pollution, Water pollution, Sound pollution, Automobile and industrial pollution, Climate change, Carbon credits – emerging market

**Module 5: Economic Approach to Issues in Land Acquisition Laws:** Acquisition of land for public purpose, Acquisition for companies, Purpose and suitability, Market value and compensation

**Module 6: Town Planning Laws:** Allocation of land – for residential, industrial, commercial, agricultural purposes, Reservation of land for public purpose

**Module 7: Special Economic Zones:** Concept, Law, Policy and Problems

**Module 8: Intellectual Property Rights:** Patents, Copyrights, Trademark, Trade secrets, Plant varieties & Farmers’ Rights, Salient features of Indian Laws

**Module 9: Economic Analysis of Corporate Law Issues:** Formation of a company, share capital and fund raising, Separation of ownership and control, Majority power and minority protection, Corporate governance, Regulation of security markets and protection of investors and SEBI, Management of foreign investment and foreign exchange under FEMA

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## **FE-B-111: COMPANY LAW**

**Objectives:** This course provides detailed exposition to legal aspects of the firm in Indian environment. The focus is on the characteristics of company as a legal entity, legal financial powers of various parties like shareholders, directors and provisions regarding multinational companies.

### **Module 1: Company**

Meaning of Company – Essential characteristics – Corporate Personality and Lifting the Corporate Veil – Forms of Corporate and Non-Corporate Organisations – Corporations, Partnerships and Other Associations of Persons – State Corporations – Government Companies – Public Sector Private Sector – Their Role – Functions and Accountability of Companies.

### **Module 2: Incorporation**

Memorandum of Association – Various Clauses – Alteration therein – Doctrine of Ultra Vires – Articles of Association – Binding Force Alteration – Its Relations with Memorandum of Association – Doctrine of Constructive Notice and Indoor Management Exceptions – Prospectus – Issue – Contents – Liability for Misstatements – Statement in Lieu of Prospectus – Promoters – Position – Duties and Liabilities

### **Module 3: Shareholders**

Shares – General principles of Allotment Statutory Restrictions – Share Certificate its Objects and Effects – Transfer of Shares – Restrictions on Transfer – Procedure for Transfer – Refusal of Transfer – Role of Public Finance Institutions – Relationship Between Transferor and Transfers – Issue of Shares at Premium and Discount – Shareholder – Who Can Be and Who Cannot Be a Shareholder Modes of Becoming a Shareholder Calls on Shares – Forfeiture and Surrender of Shares – Lien on Shares Rights and Liabilities of Shareholder – Share Capital – Kinds – Alteration and Reduction of Share Capital – Further Issue of Capital – Conversion of Loans And Debentures Into Capital Duties Of Court To Protect The Interests Of Creditors and Shareholders.

### **Module 4: Directors**

Directors – Position – Appointment – Qualifications – Vacation of Office – Removal – Resignation – Powers and Duties of Directors – Meeting – Registers – Loans Remuneration of Directors – Role of Nominee Directors – Compensation for Loss of Office – Managing Directors and Other Managerial Personnel – Meetings – Kinds procedure – Voting.

### **Module 5: Dividends, Debentures, Borrowing Powers**

Dividends – Payment – Capitalization of Bonus Shares – Audit and Accounts – Borrowing – Powers – Effects of Unauthorised Borrowing – Charges and Mortgages – Loans to Other Companies Investments – Contracts by Companies – Debentures – Meaning – Floating Charge – Kinds of Debentures – Shareholder and Debenture Holder – Remedies of Debenture Holders.

### **Module 6: Majority Rule**

Protection of Minority Rights – Prevention of Oppression and Miss-Management – Who Can Apply – When Can He Apply – Powers of the Court and of the Central Government

**Module 7: Other Allied Aspects**

Private Companies – Nature Advantages Conversion into Public Company Foreign Companies – Government Companies – Holding and Subsidiary Companies – Investigations – Powers – Reconstruction and Amalgamation – Defunct Companies – National Company Law Tribunal: Powers and Functions.

**Module 8: Law and Multinational Companies**

Collaboration Agreements for Technology Transfer – Control and Regulation of Foreign Companies – Taxation of Foreign Companies – Share Capital in Such Companies.

**Module 9: Winding Up**

Winding up – Types – By Court – Reasons – Grounds – Who Can Apply – Procedure – Powers of Liquidator – Powers of Court Consequences of Winding Up Order – Voluntary winding up by members and creditors winding up subject to supervision of court.

**Module 10: Winding Up Proceedings**

Appointment of liquidator – Powers and duties of official liquidator – Liability of past members – Payment of liabilities – Preferential payments – Unclaimed dividends – Winding up of unregistered company

**Module 11: Law and Economics of Corporate Law**

Characteristics of corporation, functions of corporate law, Basic constituents and stake holders, Gatekeepers, Various branches of economics and theories of firm-Neoclassical Economics, Transaction Cost Economics, New Institutional Economics, Economics of Organization, Contract Theory, Economics of Information, Financial Economics, Corporate Finance, Behavioural Economics

**Reading List:**

- Ramaih, A Guide to Companies Act, Wadhwa Publications.
- Singh, Avatar, Company Law, Eastern Book Company, Lucknow.
- Raman, Anantha, Lectures on Company Law, Wadhwa and Company.
- Tandon, M.P., Company Law, Allahabad Law Agency, Allahabad.
- Rai, Kailash, Company Law, Allahabad Law Agency, Allahabad.
- Majumdar, Company Law, Taxman Publications.
- (Note: The latest editions of each of the books should be referred.)

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## **FE-B-112: LINEAR ECONOMICS – I**

### **Preamble**

This course exposes students to developments in economic theory that have been inspired by the classical economists like Adam Smith and David Ricardo. The course begins by an exposition of the fallacies in the neo-classical theories of value and distribution and the limitations of standard general equilibrium theory. It then proceeds to cover input-output analysis and its empirical applications. Finally it covers alternatives to the neo-classical theories such including the Kaldor Pasinetti theory of income distribution and the Sraffa and Von Neumann models. Finally an alternative general equilibrium model is covered which determines prices, outputs, growth and income distribution.

### **Model 1**

Critique of Marshall's theory of supply based on the law of variable proportions. Critique of the marginal productivity theorem. Critiques of neo-classical production functions.

### **Module 2**

Economy as a Circular Flow. Static closed and open input output models. Hawkins-Simon conditions. Construction of Input-Output tables. Some applications. Dynamic input-output analysis.

### **Module 3**

The Von Neumann model. The Sraffa system and its properties. Standard Commodity. Reduction to dated labour.

### **Module 4**

Alternative theories of income distribution. The Kaldor Pasinetti model and its developments.

### **Module 5**

Closure for the Sraffa system. An alternative general equilibrium model and its empirical relevance.

## **Reading List:**

### **Books:**

Hadley, G( 1961), Linear algebra, Addison-Wesley Massachusetts

Namboodiri, Krishnan (1984), Matrix algebra: An introduction, Sage publication, Volume -38

Lipachutz, Seymour, Linear Algebra ,Third Edition, Schaum Outlines Series

Shanti, Narayan, Lipson Marc (2002), A text book of matrices, Schaum Outlines Series.

Bellman, Richard (1970), Introduction to matrix analysis, 2nd edition, McGraw-Hill, New York, NY.

Mills, Gordon (1970) Introduction to linear Algebra, Aldine Pub. Co. (Chicago).

Mathur, P.N. & Bharadwaj, R (1968), Economic Analysis in Input Output Framework with Indian Empirical Explorations, Vol. 1. Input Output Research Association, India.

Dorfman R., Samuelson P., Solow R. (1958), Linear programming & economic analysis, McGraw-Hill New York.

Saluja M.R. (1981), Input-output tables for India, John Wiley & Sons (Asia) Pte Ltd.

Yan, Chiou Shaung (1969), Introduction to -Input-output economics, Holt, Rinehart, and Winston

Mathur & Venkatramaaiah (1969), Economic analysis in input and output framework, Vol. II, Input Output Research Association.

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Carter & Brody (1972), Applications of Input-output analysis, North Holland/Elsevier, Amsterdam United Nations, Input-output and analysis

Bulmer, Thomas (1982), Input-output analysis in Developing countries, (2<sup>nd</sup> edition) John Wiley & Sons Ltd. pp. XI—XII. New York.

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#### **Article:**

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Kalecki, M. (1953) *Studies in Economic Dynamics*, Allen and Unwin, New York.

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Sraffa, P. (1960) *Production of Commodities by Means of Commodities*, Cambridge University Press, Cambridge.

Steedman, I.(1977) *Marx after Sraffa*, New Left Books, London.

Stone, J.R.N. (1954) "Linear Expenditure Systems and Demand Analysis; An Application to the Pattern of British Demand," *Economic Journal*, Vol.164.

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## **FE-B-113: LINEAR ECONOMICS – II**

### **Preamble**

This course is a continuation of Linear Economics – I whose purpose is to expose students to alternative theories of international trade and to monetary general equilibrium theory.

### **Module 1**

Critique, of the Heckscher-Ohlin-Samuelson trade model. 'Twoness' in trade theory. Non-viability of reduction of reality to  $2 \times 2 \times 2$  models. Critique of exchange rate theories: the demand supply diagram, the purchasing power parity theory, etc.

### **Module 2**

Frank D. Graham's theory of multicountry multicommodity trade. Extensions of the theory to tariffs, intercountry transfers and taxation. Trade in intermediate and final goods.

### **Module 3**

Money in General Equilibrium Theory: Patinkin's Findings of Arrow, Clower, Hahn, Ostroy. Keynesian Counter revolution. Essentiality of Money of in the real world.

### **Module 4**

The Static Keynesian economy with money. Critique of -ISLM model. Possibility of unemployment equilibrium. Fiscal Policy. General ineffectiveness of monetary policy instruments including TARP, etc.

### **Module 5**

Dichotomy in the theories of the level and theories of the term structure of interest rates. Integrated model of the level and structure of spot interest rates.

### **Module 6**

The dynamic Keynesian economy with money and several financial assets. General disequilibrium. Role of fiscal and monetary policies.

**Reading List:****Books:**

Graham, F. D. (1948), *The theory of International Values*; Princeton University Press

Parchure, Rajas (1994), *The Theory of International Values*, Wiley Eastern, New Delhi

**Article:**

McKenzie, L.W. (1954), "On Equilibrium in Graham's Model of World Trade & Other Competitive Systems," *Econometrica*, 22, pp. 147-161 April

McKenzie, L.W. (1954b), "Specialization & Efficiency in World Production," *Review of Economic Studies*, Vol-21, pp. 166-167.

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Jones, R. W. (1977), "'Twoness' in Trade Theory: Costs & Benefits" *Special Papers in International Economics* 12. International Finance Section, Princeton.

R.W. Jones (1979), *International Trade: Essays in Theory*, North-Holland, Amsterdam,

Jones, R. W. (1961) "Comparative Advantages and the Theory of Tariffs: Multicountry Multi-Commodity Model", *Review of Economic Studies*, Vol.28.

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Arestis P. and M. Sawyer (2010) "The Return of Fiscal Policy" *Journal of Post-Keynesian Economics*, 32, 327-46.

Arrow, K.J. and Hahn, F.H.1971. *General Competitive Analysis*, San Francisco: Holden-Day Inc.

Bewley, T. 1980. "The optimum quantity of money", in: J. Kareken and N. Wallace, eds., *Models of monetary economics*. Minneapolis: Federal Reserve Bank of Minneapolis.

Black, F. 1974. 'Uniqueness of price level in monetary growth models with rational expectations', *Journal of Economic Theory*, 7: 53-65.

Brock W. 1974. 'Money and growth: The case of long-run perfect foresight', *International Economic Review*, 15: 750-777.

Brody, A. 2000. 'The Monetary Multiplier ', Vol. 12, No. 2, pp. 215-219, *Economic System Research*.

Chick, V. 1973. *The Theory of Monetary Policy*, 1<sup>st</sup> edn, Oxford: Blackwell.

Chick, V. 1983. *Macroeconomics After Keynes*, London: Philip Allan.

Clower, R. 1967. 'A reconsideration of the micro-foundations of monetary theory', *Western Economic Journal*, 6: 1-9.

Clower, R.W. 1965. "The Keynesian Counter-Revolution: A Theoretical Appraisal," in *The Theory of Interest Rates*, eds. F.H. Hahn and F.P.R. Brechling, 103-125, London: Macmillan.

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