

SEMESTER – IV

GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, NEW DELHI
MASTER OF BUSINESS ADMINISTRATION (MBA)

Project Dissertation

Course Code: MS 202

Credits – 6

Course Outcomes:

CO1: Identify and articulate a clear research question or research problem.

CO2: Perform a thorough literature review & formulate a hypothesis.

CO3: Distinguish between different research methodologies and know when to use them.

CO4: Collect pertinent data, analyse it and communicate clearly and effectively the findings and conclusions.

CO5: Give recommendations based on research findings in the interest of benefitting industry and society.

Every student shall undertake a project under the supervision of an internal supervisor. The dissertation along with a soft copy will be submitted by the students in their respective institutions in the fourth semester. The filled questionnaires, if applicable, be also submitted in the respective Institutions along with the report. The suggested format of the report is given below:

- Executive Summary
- Introduction- Problem Purpose Statement
- Objectives of the Research Undertaken
- Literature Review
- Hypothesis, if any
- Research Methodology
- Data Analysis
- Findings and Conclusions
- Recommendations
- References/ Bibliography
- Appendices – to include questionnaire, if any

The student shall be required to submit progress reports as per the schedule to be announced by the School/Institutions for assessment by the internal project guide. The total marks will be 100 out of which 60 marks will be given by the external examiner and 40 marks to be given by the internal Project Guide. The internal assessment shall be done on the basis of a presentation by the student as per the assessment schedule to be decided and announced by the School/Institution. The external assessment shall be done on the basis of a Viva-Voce and the report by an examiner to be appointed by the University.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	3	3	2	3	2	2	3	3
CO2	3	3	2	1	2	2	2	3	3
CO3	3	3	3	3	3	2	2	3	3
CO4	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	2	3	3	3

GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, NEW DELHI
MASTER OF BUSINESS ADMINISTRATION (MBA)

Corporate Social Responsibility, Human Values and Ethics

Course Code: MS 204

L - 3, Credits – 3

Objective: The course is aimed at building a perspective necessary for the application of human values and norms in evaluating business decisions taken by a firm. The course will primarily look at recent developments in business in the context of corporate social responsibility paradigm.

Course Outcomes:

CO1: Learn the significance of value system and ethical conduct in business

CO2: Examine the association between corporate strategy, Corporate Social Responsibility (CSR) and its influence on stakeholder engagement

CO3: Compare and contrast the multiple international frameworks of CSR and Sustainability.

CO4: Understand the issues that organizational leaders face as they develop their CSR and corporate governance programs

CO5: Analyze the impact of CSR implementation on corporate culture, in the realm of sustainable development, innovation, and solutions to business, social and environmental problems.

Course Content

Unit I

Introduction: Values, Concepts, Types and Formation of Values, Business Ethics: Ethical theories; Ethical Decision Making; Corporate Social responsibility (CSR): A Historical Perspective and emerging theories of CSR; CSR and regulatory issues: Companies Law 2013, Business Responsibility Report (SEBI), NVG Guidelines (Ministry of Corporate Affairs)

(10 hours)

Unit II

Ethical Dilemma, Implications of failed corporate responsibilities: Worker rights and health, Human rights, Stockholders Right and Corporate Governance; Unethical Issues in Sales, Marketing, Advertising and Supply Chain; Intellectual Property Rights, Corruption in Business and Administration, Technology and Privacy in the workplace: Big Data and analytics, Ethical and Regulatory Framework.

(12 hours)

Unit III

International Frameworks of CSR and Sustainability: Global Compact, Caux Round Table, OECD Guidelines for Multinational Enterprises, GRI, SA8000 Standard, BS/ISO Guideline on CSR Management (ISO-26000), Social Audit, ILO tri-partite declaration of principles on multinational enterprises and social policy.

(10 hours)

Unit IV

Sustainable Development: Challenges of Sustainable Development, CSR as a Strategic Business tool for Sustainable development; Kyoto Protocol and Clean Development Mechanism (CDM), Managing Environmental Quality, Green IT initiatives, Voluntarism, Judicial activism, Environmental, Social, and Governance (ESG) analysis and other emerging trends in Corporate Social Responsibility.

(10 hours)

Suggested Readings: (Latest Editions)

1. Lawrence, A. T., and Weber, J., Business and society: Stakeholders, Ethics, Public Policy. McGraw-Hill Education.
2. Blowfield, M., & Murray, A., Corporate Responsibility. Oxford University Press
3. Vertigans, S., & Idowu, S. O., Global Challenges to CSR and Sustainable Development. Springer International Publishing.
4. Mitra, N., & Schmidpeter, R., Corporate Social Responsibility in Rising Economies. Springer International Publishing.
5. Hartman, L. P. and DesJardins J. & MacDonald C., Business Ethics: Decision-Making For Personal Integrity And Social Responsibility, Mc Graw Hill Education.
6. Manuel G.Velasquez , Business Ethics Concepts and Cases, Pearson Education

CO-PO MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
C01	3			2			3		1
C02		3					2	2	1
C03			2	2			2		3
C04				3	2		2	1	1
C05		2			2	1	2		2

GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, NEW DELHI
MASTER OF BUSINESS ADMINISTRATION (MBA)

Advertising & Brand Management

Course Code: MS 206

L-3 Credits: 3

Objective: The objective of this course is to provide an understanding of the basic principles of advertising management and to develop an understanding of the brand concept.

Course Outcomes:

CO1: Understand the nature and scope of advertising management as a part of Integrated marketing communication.

CO2: Evaluate different media and media selection for its effectiveness.

CO3: Interpret importance of strategic brand management process with help of different model.

CO4: Analyse managing global brands in different sectors.

Course Content

Unit I

Role of Integrated Marketing Communication; Process of Marketing Communication; Definition and Scope of Advertising Management; Determination of Target Audience, Advertising and Consumer Behavior; Setting Advertising Objectives, DAGMAR; Determining Advertising Budgets; Advertising Strategy and Planning, Creative Strategy Development and Implementation. **(10 Hours)**

Unit II

Media Planning: Setting Media Objectives; Developing Media Strategies, Evaluation of Different Media and Media Selection; Media Buying; Measuring Advertising Effectiveness; The Organization for Advertising; Social, Ethical and Legal Aspect of Advertising. **(10 Hours)**

Unit III

Brand-concept: Nature and Importance of Brand; Types of brands , Strategic Brand Management Process; Brand Identity perspectives , Brand identity prism, Identity levels, Concepts and Measures of Brand Equity, Brand Assets and liabilities, Aaker Model of Brand Equity, Designing marketing programs to build brand Equity, customer based brand equity , Brand Loyalty, Measures of Loyalty;, Branding strategies – product ,line , range and umbrella branding , Brand Personality: Definition, Measures and, Formulation of Brand Personality; Brand Image dimensions, Stages of Concept Management for functional, symbolic and experiential brands. **(10 Hours)**

Unit IV

Brand Positioning: Concepts and Definitions, 3 Cs of positioning, Brand positioning and differentiation strategies, Repositioning, Celebrity Endorsements, Brand Extension; Managing brands over time, Brand reinforcement, brand revitalization, managing global brands, Branding in different sectors Case studies. **(12 Hours)**

Suggested Readings: (Latest Editions)

1. Wells W., Burnet J. and Moriarty S. Advertising: Principles & Practice, Pearson Education

2. Keller K. L, Strategic Brand Management, Pearson Education Reference O’Guinn,T. and Allen, Advertising Management with Integrated Brand Promotion, 1st Edition, Cengage Learning, New Delhi.
3. Shah, Kruti and D’Souza, Alan, Advertising and Promotions” An IMC Perspective, Ist Edition, Tata McGraw Hill , New Delhi
4. Aaker, David, Managing Brand Equity, Prentice Hall of India.
5. Belch, G. E. & Belch, M. A. Advertising and Promotion, Tata McGraw Hill
6. Sharma, Sangeet., and Singh, Raghuvir. Advertising: Planning and Implementation, Prentice Hall of India.

CO-PO MAPPING

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9
CO 1	3	2	2	2	1	2	2	1	2
CO 2	2	2	1	2	2	2	2	2	2
CO 3	3	2	2	2	2	2	2	2	1
CO 4	2	2	2	2	1	2	2	2	1

**GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, NEW DELHI
MASTER OF BUSINESS ADMINISTRATION (MBA)**

Digital & Social Media Marketing

Course Code: MS 208

L-3 Credits: 3

Objective: This course aims at creating an understanding of the concepts and techniques of digital marketing so as to exploit the opportunities of this medium to support the organization's marketing activities.

Course Outcomes:

CO1: Understand the concepts, techniques and evolving strategies of internet marketing.

CO2: Assess opportunities of internet medium to support the organization's marketing activities.

CO3: Understanding consumer behaviour on digital media

CO4: Understanding and Implementing Social Media Marketing Strategies.

Course Content

Unit I

Introduction to Digital Marketing: Meaning, origin, scope and importance of digital marketing, Application of Digital marketing, Internet versus traditional marketing communication: the internet microenvironment; Business to Consumer and Business to Business Internet Marketing; E-Marketing Research; Digital marketing strategy. **(10 hours)**

Unit II

Online buyer behaviour and Models: The Marketing Mix in an online context; Managing the Online Customer Experience: Planning website design, Understanding site user requirement, site design and structure, developing and testing content, e-Service quality. **(8 hours)**

Unit III

Characteristics of Interactive Marketing Communications: Integrated Internet Marketing Communications (IIMC); Objectives and Measurement of Interactive marketing communication; Online Promotion Techniques: Display Advertising, Search Engine Marketing & SEO, Online PR. Interactive Advertising, Online Partnerships, Viral Marketing, Opt-in-e-mail, Offline Communications; e-CRM **(12 hours)**

Unit IV

Social Media Marketing: Meaning, Scope and Importance; SMM Plan - Goals and Strategies, Rules of Engagement & Ethical Issues, Publishing Blogs and Webinars, Sharing Videos/ Images, Social Networks, Microblogging; Mobile and Location based Marketing; Social Media Monitoring; Web Analytics. **(12 hours)**

Suggested Readings: (Latest Editions)

1. Chaffey, D., Ellis-Chadwick, F., Mayer, R., & Johnston, K., Internet Marketing: Strategy, Implementation and Practice. Pearson Education. New Delhi.
2. Hanlon, A., Digital Marketing – Strategic Planning & Integration, Sage Publishing.
3. Gupta, S., Digital Marketing, McGraw Hill Education.
4. Gay, R., Charlesworth, A., & Esen, R. Online Marketing: A Customer-led Approach. Oxford University Press., New Delhi

5. Solomon, M.R., Tuten, T., Social Media Marketing, Pearson Education.
6. Hanson, W. and Kalyanam, e-Commerce and Web Marketing, Cengage Learning, New Delhi.

CO-PO MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	2	3	2	3	3	2	2	3
CO2	3	3	2	3	2	3	2	3	2
CO3	3	3	3	3	3	3	1	2	3
CO4	3	3	3	3	3	3	2	2	2

**GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, NEW DELHI
MASTER OF BUSINESS ADMINISTRATION (MBA)**

Marketing Analytics

Course Code: MS 210

L-3 Credits: 3

Objective: This course will provide the students, a solid foundation in marketing analytics so that students can handle a variety of marketing data, build advanced analytical models, and deliver effective visualisation products and reports.

Course Outcomes:

CO1: Understanding the basic concept of data management and data mining techniques in marketing management

CO2: Understand the importance of marketing analytics for planning and systematic allocation of marketing resources

CO3: Learn how to create a predictive marketing dashboard for an organisation using marketing analytics.

CO4: Analyze data and draw conclusions from it to solve strategic marketing problems

Course Content

Unit I

Introduction: Marketing Analytics – meaning and scope, Data for Marketing Analytics, Exploratory analysis. Descriptive analysis. Predictive analysis, prescriptive analysis. Use of Excel for summarising marketing data. **(10 Hours)**

Unit II

Segmentation, Positioning & Marketing Mix: Customer analytics, benefits from customer analytics, Segmentation analytics, cluster analysis. Perceptual mapping, umbrella brands, Multi dimensional scaling. Marketing Mix Modelling- variables and techniques. **(12 Hours)**

Unit III

Pricing & Customer Journey: Goals of Pricing, Bundling. Skimming, revenue management, promotions. Customer journey mapping, Customer loyalty, Customer lifetime value- meaning and calculation. **(10 Hours)**

Unit IV

Digital Analytics: Metrics and Measurement: Important web metrics, SEO and SEM, Social Media Analytics, Networks, Viral marketing, Text Mining **(10 Hours)**

Suggested Readings (Latest Editions):

1. Winston, W.L., Marketing Analytics, Wiley India Pvt Ltd.
2. Gupta, S.,Jathar, A., Marketing Analytics, Wiley India Pvt Ltd.
3. Maity, M.,Gurazada, P., Marketing Analytics - For Strategic Decision-Making, Oxford University Press.
4. Hemann, C., Digital Marketing Analytics: Making Sense of Consumer Data in a Digital World, Pearson Education.
5. Hair, J., Harrison, D.E., Ajjan, H., Essentials of Marketing Analytics, McGraw Hill Higher Education

6. Mike, G., “Marketing Analytics: A Practical Guide to Real Marketing Science”, Kogan Page Publishers

CO-PO MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	2	2	2	3	3	2	3	3
CO2	3	3	2	2	3	3	2	3	3
CO3	3	3	3	3	3	3	2	3	3
CO4	3	3	3	3	3	3	2	3	3

GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, NEW DELHI
MASTER OF BUSINESS ADMINISTRATION (MBA)

Retail Management

Course Code: MS 212

L-3 Credits: 3

Objective: This course is aimed at providing students with a comprehensive understanding of the theoretical and applied aspects of retail management.

Course Outcomes:

CO1: Explain the retailing concept, its evolution and importance, and the forces impacting retail development at the Indian and global level.

CO2: Explain the process of retail strategy formulation, identify the sources of sustainable competitive advantage, develop an appropriate financial strategy and evaluate location and site alternatives.

CO3: Demonstrate an understanding of the merchandise management process, inventory planning, retail pricing and designing of the retail communication mix.

CO4: Evaluate store layout and design alternatives, and demonstrate an understanding of store management as well as display a sensitivity towards the human resources, ethical and legal issues in retailing.

Course Content

Unit I

Introduction to Retailing: Definition, Scope and Importance of Retailing; Global and Indian Retail Scenario; Types of Retailers & Retail Formats; Theories of Retail Development; Multichannel and Omni Channel Retailing, Information Gathering in Retail. **(10 Hours)**

Unit II

Retail Strategy: Retail Market Strategy; Financial Strategy; Retail Location & Site decisions; Franchising Decision; Retail Information system, Customer Relationship Management, GAPs Model in Retail. **(12 Hours)**

Unit III

Merchandise Management & Retail Promotion: Merchandise Planning; Merchandise Buying; Retail Pricing; Retail Communication Mix. **(10 Hours)**

Unit IV

Store Design & Management: Store Layout, Atmospherics & Design, Visual Merchandising, Store Management & Responsibilities of a Store Manager, Inventory Shrinkage, Customer Services, Legal & Ethical Issues in Retailing. **(10 Hours)**

Suggested Readings: (Latest Editions)

1. Levy M., Weitz B.A and Pandit A., Retailing Management, McGraw Hill Education, Indai.
2. Berman B. Evans J. R. & Mathur, M., Retail Management, Pearson Education, India.
3. Pradhan S., Retailing Management – Text and cases, McGraw Hill Education, India.
4. Bajaj C., Tuli R. & Srivastava N. V., Retail Management, Oxford University Press.
5. Lusch, R.F, Dunne, P.M and Carver, J.R., Introduction to Retailing, Cengage India Pvt. Ltd, New Delhi.
6. Vedamani, Gibson G., Retail Management: Functional Principles and Practices, Jaico Books, New Delhi.

CO-PO MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	2	2	2	2	2	3	2	1	2
CO2	2	2	2	2	2	3	2	2	2
CO3	2	1	1	2	3	2	2	2	2
CO4	2	1	2	2	3	2	2	2	2

**GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, NEW DELHI
MASTER OF BUSINESS ADMINISTRATION (MBA)**

Mergers, Acquisitions and Corporate Restructuring

Course Code: MS 214

L – 3, Credits – 3

Objective: The fundamental aim of the course is to prepare students to take advantage of the current scenario and understand how corporate restructuring is implemented. At the end of the course, the students should be able to focus on the process of restructuring, identify issues post transaction, their implications and determine the managerial actions for decision making. The course should be complemented with the use of analytical tools.

Course Outcomes:

CO1: Understand the process of corporate restructuring

CO2: Ability to comprehend the value of mergers, acquisitions, and other corporate restructuring tools for the business

CO3: Develop the skillset to evaluate the opportunity for corporate restructuring

CO4: Ability to value the firms through various accounting and managerial methods

CO5: Competence to appreciate and resolve the HR and other cultural issues involved in mergers, and acquisitions

Course Content

Unit I

Introduction to Mergers: Types of Mergers, Merger Strategy- Growth, Synergy-Operating Synergy, Financial Synergy, Diversification, Other Economic Motives, Hubris Hypothesis of Takeovers, Other Motives, Tax Motives, Financial Evaluation, Joint Venture and Strategic Alliances. **(12 Hours)**

Unit II

Legal Aspects of Mergers/ Amalgamation and Acquisition: Provisions of Companies Act, Regulation by SEBI, Takeover Code: Scheme of Amalgamation, Approval from Court, Valuation of a Business. **(10 Hours)**

Unit III

Methods of Valuation : Cashflow Basis, Earning Potential Basis, Growth Rate, Market Price etc., Computation of Impact on EPS and Market Price, Determination of Exchange Ratio, Impact of Variation in Growth of the Firms, MBO, LBO, Boot Strapping, Criteria for Negotiating Friendly Takeover, Financing of Merger. **(10 Hours)**

Unit IV

Defence against Hostile Takeover: Poison Pill, Bear Hug, Greenmail, Pacman, Managing Post Merger H.R. and Cultural Issues, Cross Border Mergers and Acquisitions, Recent Cases of Corporate Restructuring. **(10 Hours)**

Suggested Readings: (Latest Editions)

1. Depamphilis, D., Mergers, Acquisitions and Other Restructuring Activities. Elsevier Incorporation.
2. Gaughan, & Patrick, A., Mergers, Acquisitions and Corporate Restructurings. Wiley India.
3. Prasad, G. G., Mergers, Acquisitions and Corporate Restructuring. Vikas Publications.
4. Ramanujan, S., Mergers: The New Dimensions for Corporate Restructuring. Tata McGraw Hill.

5. Kar, R.B., Minakshi, Mergers Acquisitions & Corporate Restructuring - Strategies & Practices. Taxmann.
6. Kapil, S., Kapil, K.N., Mergers and Acquisitions: Strategy, Valuation, Leveraged Buyouts and Financing. Wiley.

CO-PO MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	2	3		1	2	1	1	1	3
CO2	1	1	3	1	2	3	2	2	3
CO3	1	1	3	1	2	2	2	3	2
CO4	1	1	2	1	2	1	3	3	1
CO5	1	1	3	1	2	2	2	3	2

GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, NEW DELHI
MASTER OF BUSINESS ADMINISTRATION (MBA)

Financial Derivatives

Course Code: MS 216

L – 3, Credits – 3

Objective: The course aims at providing detailed understanding of the characteristics and applicability of financial derivatives along with the relevant regulatory framework.

Course Outcomes:

CO1: To develop an understanding amongst students of financial derivatives about theories, principles of derivatives pricing and models.

CO2: To understand the regulatory framework and interplay of other macro-economic and social factors that impact derivatives market.

CO3: To develop skills required for taking corporate finance-related decisions to maximize the firm value through inter-company derivatives investments.

CO4: To equip the students to conceive and evaluate entrepreneurial ideas in the field of financial derivatives trading and for taking-up consultancy assignments in the field of personal finance and wealth management.

Course Content

Unit I

Financial Derivatives: An Introduction to Financial Derivative Markets; Past and Present, Concept, Purpose and Types of Financial Derivative Instruments; Forwards, Futures, Options, Swaps, and Other Derivatives; Hedgers, Arbitrageurs and Speculators. Difference between Exchange Traded and OTC Derivatives. **(10 Hours)**

Unit II

Financial Forward and Futures Contracts: Financial Forward Contracts; Concept Characteristics, and Type of Financial Forward Contracts; Equity Forward, Currency Forward; Financial Future Contracts: Concept, Characteristics, and Type of Financial Future Contracts; Stock Future, Index Future, Currency Future; Future Market-Trading and Mechanism; Future Pricing-Theories, Cost of Carry Model; Hedging strategies. **(12 Hours)**

Unit III

Financial Option and Swap Contracts: Financial Options; Concept, Characteristics and Types of Financial Options; Stock Options, Index Options, Currency Options, Commodity Options, Option on Futures, Interest Rate Options. Option Pricing Models-the Black-Scholes Option Pricing Model, Binomial Option Pricing Model, **(10 Hours)**

Unit IV

Trading & Regulatory Framework: Trading with Option, Option Strategies; Straddle, Strangle, Spreads. Option Greeks; Delta, Gamma, Theta, Vega, Rho; Exotic Option; Swaps; Concept, characteristics and Types of Swaps. Regulation of Financial Derivatives in India; Securities and Contracts (Regulation) Act (2013), Guidelines of SEBI and RBI. **(10 Hours)**

Suggested Readings (Latest Editions)

1. Hull, J.C. & Basu, S., Options, Future & Other Derivatives. Pearson.
2. Gupta, S.L., Financial Derivatives : Theory, Concepts And Problems. PHI.
3. Das, S., Derivatives: Principles and Practice, McGraw Hill.
4. Yaragol, P.B., Financial Derivatives: Text And Cases. Vikas Publishing House.
5. Chance, D., & Brooks, R., Derivatives and Risk Management Basics. Cengage Learning.
6. Summa, J., & Lubow, J. W. Options on Futures: New Trading Strategies. Wiley.

CO-PO MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	2	3			2				3
CO2			3		2	3	2		3
CO3			3				2	3	
CO4			2			1	3	3	

GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, NEW DELHI
MASTER OF BUSINESS ADMINISTRATION (MBA)

Behavioral Finance

Course Code: MS 218

L – 3, Credits – 3

Objective: The students are expected to understand the behavioral aspects of irrational market participants and their influence on the market.

Course Outcomes:

CO1: The students will understand interrelationship of economic, social, psychology theories underlying human decision making.

CO2: This course will help students develop understanding of foundations of behavioral finance and its theories.

CO3: They will learn tools and techniques for analysing stock market behaviour and will be able to make strategies for designing portfolios.

CO4: The course is especially useful for those learners who want to start entrepreneurial ventures as investment consultants, advisors and investment banking.

Course Content

Unit I

Foundations of Behavioral Finance: Definition, behavioral finance micro and behavioral finance macro, important contributors, components, difference with standard finance; Market efficiency and anomalies; Expected Utility Theory; Agency theory; Limits to Arbitrage; Prospect theory, basic framework; Loss Aversion, model of loss aversion; Gambler fallacy, hot hand fallacy. **(10 Hours)**

Unit II

Investor Behaviour: Types of investors, objectives of investment, factors influencing Investor decision making, factors influencing investor personality, characteristics of successful investors; Risk Attitude, types of risk, standard finance view of risk, behavioral finance viewpoint of risk, risk perception, factors affecting risk attitude; Investor Personality, tools, investor models, contrarian investor, examples, strategies. **(10 Hours)**

Unit III

Behavioural Biases and Irrational Investing: Heuristics and Biases, representativeness heuristic, availability heuristic, affect heuristic, similarity heuristic; Cognitive and Emotional Biases, overconfidence bias, cognitive dissonance 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, recency bias, regret aversion bias, status quo bias, Strategies to Overcome Biases; Over Reaction and Optimism; Herding Behaviour and Mean Reversal. **(11 Hours)**

Unit IV

Recent Advances in Behavioural Finance: Neuro Finance, human brain, neurotechnology; Noise Trading, Behavioural Capital Asset Pricing Model, Behavioural Portfolio Theory, investor sentiments; Conflict of Interest and Group Psychology on Board, contract theory, corporate governance, strategies. **(11 Hours)**

Suggested Readings: (Latest Editions)

1. Monitor, J. Behavioural Finance: Insights into Irrational Minds and Markets. Oxford University.

2. Shefrin, H. *Beyond Greed and Fear: Understanding Behavioral Finance and the Psychology of Investing*. Harvard Business School Press.
3. Thaler, R. H. *Advances in Behavioral Finance*. Russell Sage Foundation.
4. Tvede, L. *The Psychology of Finance: Understanding the Behavioural Dynamics of Markets*. Wiley.
5. Chandra, P. *Behavioural Finance*. McGrawHill.
6. Parikh, P. *Value Investing and Behavioral Finance: Insights into Indian Stock Market Realities*. McGraw Hill.

CO-PO MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	2	3							
CO2	3	2							
CO3					2		3	3	1
CO4	2	2	3	3	3	2	3	3	2

GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, NEW DELHI
MASTER OF BUSINESS ADMINISTRATION (MBA)

FinTech

Course Code: MS 220

L – 3, Credits – 3

Objective: The course aims at providing basic concept of FinTech industry, its players, products and services to equip students with latest developments in financial sector along with the relevant regulatory framework.

Course Outcomes:

CO1: The learners will be able to have conceptual understanding of the changing financial sector and challenges of IT-driven business environment.

CO2: They will develop the skills for analyzing the risks associated with complex fintech businesses for strategic financial decision-making.

CO3: They will be able to demonstrate critical thinking abilities based on innovative practices, changing regulatory framework of FinTech and its implications for business, consumers and society.

CO4: The course will equip students with the know-how of starting a FinTech start-up venture.

Course Content

Unit I

Background: Financial System, Money and Economy, History of Financial Innovation, Digitization of Financial Services, Evolution of FinTech, Players, FinTech and Funds, Infrastructure, Banking and Financial Institutions, FinTech Typology, Consumer tech-innovations, Issues and Challenges, Global FinTech Scenario. **(12 Hours)**

Unit II

FinTech Innovations and products: FinTech Innovations, Payments, Clearing and Settlement, payment technology, Deposits, Lending and capital raising, Digital finance, Alternate financing, Digital lending, Market provisioning, Investment management, Data Analytics and Risk Management, NFT, Cryptocurrency and its types, Central banking digital currency, InsurTech, TechFin. **(10 Hours)**

Unit III

Regulation and Supervision: RegTech, Evolution of RegTech; RegTech Ecosystem, Regulatory Sandboxes; SupTech, FinTech Supervision; Indian Regulatory bodies, regulatory initiatives; Global regulations and Indian scenario. **(10 Hours)**

Unit IV

Future technologies: Understanding Blockchain, process of decentralisation; Artificial intelligence and Finance; Financial analytics; Frauds and cyber-security, Managing Fintech Start-ups; Recent developments of Fintech in India; FinTech Case Studies. **(10 Hours)**

Suggested Readings: (Latest Editions)

1. Sanjay Phadke, FinTech Future, Sage Publications.
2. Hanlon, Steven et al, FinTech for Dummies, Wiley Publications.
3. Swaminathan K., “Future Fintech Framework: A Vision to Simplify Understanding, Foster Innovation & Accelerate Growth in Fintech”, Notion Press Publications.
4. Matthias Fisher, FinTech Business Models, De Gruyter Publications.
5. Bernardo Nicoletti, The Future of FinTech: Integrating Finance and Technology in Financial Services, Palgrave Macmillan.
6. Rubini, A. Fintech in a Flash: Financial Technology Made Easy. Zaccheus.

CO-PO MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	3	2	1	3	3	3	3	1
CO2	2	3	2	2	3	3	3	3	3
CO3	3	3	2	1	3	3	3	3	1
CO4	2	3	3	2	3	3	3	1	1

GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, DELHI
MASTERS IN BUSINESS ADMINISTRATION (MBA)

Managing Organizational Development

Course Code: MS 222

L - 3 Credits - 3

Objective: The objective of this course is to equip students with the knowledge of organizational development interventions to manage change process and grow the organizations with the changing business scenario.

Course Outcomes:

CO1: Apply principles of system thinking and relevant theories that are fundamental to organizational change in the context of organizational work practices.

CO2: Think analytically and creatively to diagnose issues at the organization, group and individual level in this dynamic business environment and plan interventions for growth of the organization.

CO3: Apply the knowledge of OD interventions creatively to design interventions for their organization to improve group dynamics, teamwork, leadership, structure, culture and implement them.

CO4: Develop learning organizations, lean and agile organizations which can excel professionally and socially.

Course Content

Unit I

Introduction to Organizational Development: Nature and Characteristics of Organizational Development, Foundations of Organisational Development, Theories and Models of Organizational Change and Development, Managing Organisational Development Process, Role and competencies of the OD practitioner **(10 Hours)**

Unit II

The Diagnostic Process and Introduction to OD Interventions: Diagnosis: At the Organization, Group and Individual Level, Data Collection Process, Diagnostic Methods, Challenges in Diagnosis, Diagnostic information feedback, Designing Interventions, Characteristics of effective interventions, The Intervention Process **(8 Hours)**

Unit III

Organizational Development Interventions : Sensitivity Training, Process Consultation, Third Party Interventions, Team Building Interventions, Intergroup Relations Interventions, Organization Confrontation Meeting, Large Group Interventions: Grid OD, System 4 Management, Role Playing, Employee Empowerment, Performance Management Systems, Career Planning, MBO, Employee Wellness Interventions **(14 Hours)**

Unit IV

Techno Structural and Strategic Interventions: Restructuring Organizations, Socio-technical systems, TQM, Quality Circles, Learning Organizations, Self-Designing Organizations, Building Agile Organization through Digital Transformation: Digital-native processes (Design Thinking, Agile, Lean), Building digital-native culture and digital native-talent, Future of OD in a VUCA world (Volatility, Uncertainty, Complexity, Ambiguity) **(10 Hours)**

Suggested Readings: (Latest Editions)

1. French, W.L., Bell Jr, C.H. & Vohra, V. Organization Development: Behavioral Science Interventions for Organizational Improvement, Pearson
2. SIA. Organization Development. SIA publishers and Distributors Pvt. Ltd.
3. Perkin, N. & Abraham, P. Building the Agile Business through Digital Transformation. Kogan Page
4. Cummings, T.G. & Worley, C.G. Theory of Organization Development and Change, Cengage Learning.
5. Yaeger, T.F., Head, T.C. & Sorensen, P.F. Global Organization Development: Managing Unprecedented Change (Contemporary Trends in Organization Development and Change), Information Age Publishing
6. Hodges, J. Organization Development: How Organizations Change and Develop Effectively. Macmillan International

CO-PO MAPPING

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9
CO 1	3	3	2	3	3	1	1	2	2
CO 2	3	3	3	3	3	1	2	2	2
CO 3	3	3	3	3	3	1	3	2	2
CO 4	3	2	3	3	3	1	3	2	3

GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, DELHI
MASTERS IN BUSINESS ADMINISTRATION (MBA)

Leadership and Teamwork in Blended Organizations

Course Code: MS 224

L - 3 Credits - 3

Objective: The objective of this course is to equip students with the knowledge of leadership, its development for self and others and how to develop high performing work teams.

Course Outcomes:

CO1: Assess potential leadership traits, skills & behaviours. Student will have an increased awareness of his/her personal leadership style, e.g., interpersonal skills, team development etc.

CO2: The student will have a broad understanding from a systems perspective to identify the ways in which organizational behaviour, structure, and culture can be changed effectively in present day blended workspace for ensuring the success of the organizations.

CO3: The student will understand the structure of teams, stages of its building and behavioural dynamics involved at all stages.

CO4: The student will learn the nuances of building an effective team in the present-day blended work environment.

Course Content

Unit I

Fundamentals of Leadership: Defining Leadership, Leadership Traits, Styles and Leadership Theories (Trait, Skills, Behavioural and Situational Approach), Leadership Strategies.

(10 Hours)

Unit II

Practicing Leadership: Sights on the Right Target and Vision as a Leader, Empowering People, Building Trust, Coaching, Mentoring, Team Leadership, Collaboration: Fuel for High Performance, Organizational Leadership: Determining the Appropriate Leadership Style for Your Organization, Diagnosing Your Organization's Development Level, Matching Leadership Style to Your Organization's Development Stage, Applying the Appropriate Leadership Style at Each Development Level, The Importance of Diagnosis and Matching, Determining Your Leadership Point of View: Elements of a Leadership Point of View, Developing Your Own Leadership Point of View, Become a Higher Level Leader. Leading Blended Organizations

(12 Hours)

Unit III

Understanding Basics of Teams: Workgroup Vs. Teams: Transforming Groups to Teams; Types of Teams; Stages of Team Building and its Behavioral Dynamics; Team Role; Interpersonal Processes; Goal Setting and Problem Solving, Team Networking and Social Capital

(8 Hours)

Unit IV

Processes and Issues in Teams : Factors of Team Effectiveness, Team Communication and Collective Intelligence, Managing Team Conflicts, Creativity and Innovation in Teams: Delphi Technique; Nominal Group Technique; Brain Storming (Traditional, Electronic and Negative), Developing Collaboration in Teams: Functional and Dysfunctional Cooperation and Competition; Interventions to Build Collaboration in Organizations; Social Loafing, Synergy in Teams, Evaluating and Rewarding Teams, Virtual Teamwork, Self-Managed Teams

(12 Hours)

Suggested Readings: (Latest Editions)

1. Northouse, P.G. Leadership: Theory and Practice. Sage Publishers
2. Blanchard, K. Leading at a Higher Level: Blanchard on Leadership and Creating High Performing Organizations. Pearson Education
3. Thompson, L.L. Making the Team: A Guide for Managers. Pearson Education
4. Griffith, B.A. & Dunham, E.B. Working in Teams: Moving from High Potential to High Performance. Sage Publications.
5. AIMA. Leaders on Leadership: Insights from Corporate India. Sage Publications
6. Singh, P., Bhandarkar, A. & Rai, S. The Leadership Odyssey: From Darkness to Light. Sage Publications

CO-PO MAPPING

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9
CO 1	3	3	2	3	3	2	2	3	2
CO 2	3	3	3	3	3	2	2	3	2
CO 3	3	3	3	3	3	2	2	3	2
CO 4	3	3	3	3	3	2	2	3	2

GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, DELHI
MASTERS IN BUSINESS ADMINISTRATION (MBA)

People Analytics

Course Code: MS 226

L - 3 Credits - 3

Objective: The objective of this course is to equip students with the knowledge of people analytics to improve human capital management decisions by applying advanced analytics and "Big Data" technologies and processes.

Course Outcomes

CO1: Secure the right piece of information through analytics and take an informed decision that will benefit organization or business.

CO2: Develop ability to resourcefully use analytical information to improve the organization and its people

CO3: Develop a culture and of analytical and critical thinking by applying analytics in the people functions of the organization

CO4: Effectively measure the success of people activities and processes by overall performance and efficiency generated out of successful implementation of analytics.

Course Content

Unit I

Understanding the Fundamentals: Why People Analytics? Adoption of Analytics, HR's Contribution to Business Value, HR Decision Making and Analytics, HR Business Process and Analytics **(8 Hours)**

Unit II

Establishing an Analytics Culture: Enable Analytical Thinking, Role of Leader in creating analytic culture, Overcoming Resistance to People Analytics, Communicate with Storytelling and Visualization **(8 Hours)**

Unit III

Understanding Data and Basic Analytic Tools: Know Your Data, A Pragmatic View of Data, Solving Data Quality Challenges, Data Types and Sources, Data Governance, Creating HR Dashboards using Microsoft Excel, Applying Pivot Tables to HR data, Application of Tableau in HR Data Visualization **(12 Hours)**

Unit IV

Analytics in Various Functions and Processes: Staffing Analytics, Analytics in Manpower Planning, Training and Development Analytics, Analytics in Performance Management, Engagement Analytics, Analytics in Absenteeism, Turnover, Case Studies on various analytics **(14 Hours)**

Suggested Readings : (Latest Editions)

1. Bhattacharya, D.K. HR Analytics: Understanding Theories and Applications. Sage
2. Banerjee, P., Pandey, J. & Gupta, M. Practical Applications of HR Analytics: A Step-by-Step Guide. Sage
3. Guenole, N., Ferrar, J. & Feinzig, S. The Power of People: Learn How Successful Organizations Use Workforce Analytics to Improve Business Performance. Pearson
4. Sesil, J. C. Applying Advanced Analytics to HR Management Decisions: Methods for Selection, Developing Incentives, and Improving Collaboration (Paperback). Pearson FT Press

5. Dhir, S. & Pal, S. Human Resource Analytics: Theory and Application Techniques. Cengage
6. Edwards, M.R. & Edwards, K. Predictive HR Analytics: Mastering the HR metric. Kogan Page

CO-PO MAPPING

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9
CO 1	3	3	3	3	3	3	1	1	1
CO 2	3	3	3	3	3	3	1	1	1
CO 3	3	3	3	3	3	3	1	1	1
CO 4	3	2	3	3	3	3	1	1	1

GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, DELHI
MASTERS IN BUSINESS ADMINISTRATION (MBA)

Managing Diversity and Inclusion

Course Code: MS 228

L - 3 Credits - 3

Objective: The course aims at inculcating inclusive leadership skills to explore the diversity paradox and unpacks how leaders can leverage diversity to increase innovation and creativity for competitive advantage

Course Outcomes

At the end of the course, a student will be able to

CO1: Articulate the types of issues related to diversity and inclusion that can arise in a global workplace

CO2: Understand socio cultural dimensions of diversity in India and globally

CO3: Learn to manage cross cultural diversity

CO4: Create creative policies to encourage inclusion in the workplace

Course Content

Unit I

Introduction and Conceptual framework: Meaning of Diversity; Challenges of Managing Diversity in a Global Context; Diversity and Exclusion: A critical workplace problem; Inclusive Workplace Model **(10 Hours)**

Unit II

Global Context for Diversity Management: Diversity Legislation in Global Perspective; Discrimination, Equality and Fairness in Employment; Global Demographic Trends: Impact on Workforce Diversity; Socioeconomic Transitions **(10 Hours)**

Unit III

Social Psychological Perspectives of Workplace Diversity: Diversity in global context: Prejudice and Stereotypes; Culture and communication in global workforce; Interpersonal Relationship in Global Work Context; Inclusive Policies and Practices at various Workplace levels **(12 Hours)**

Unit IV

Diversity Management: Definition: Characteristics and Limitations; Diversity Management Paradigms; Theories on Diversity and Intergroup Relations **(10 Hours)**

Suggested Readings: (Latest Editions)

1. Mor Barak, M.E. Managing Diversity: Toward a Globally Inclusive Workplace. 4th Edition. SAGE Publications
2. Syed, J. & Ozbilgin, M. Managing Diversity and Inclusion: An International Perspective. SAGE Publications
3. Triana, M. Managing Diversity in Organization. Routledge
4. Harvey, C. & Allard, M.J. Understanding and Managing Diversity: Readings, cases and exercises. 6th Edition. Pearson
5. Kirton, G. & Greene, A.M. The Dynamics of Managing Diversity and Inclusion. Routledge
6. Carr-Ruffino, N. Managing Diversity: People skills for a Multicultural Workplace. Pearson

CO-PO MAPPING

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9
CO 1	3	2	1	2	2	1	3	2	2
CO 2	2	2	2	2	2	1	3	2	3
CO 3	3	3	2	2	2	1	3	3	2
CO 4	3	3	3	3	2	1	3	3	3

GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, DELHI
MASTERS IN BUSINESS ADMINISTRATION (MBA)

Advanced Business Analytics & Predictive Modelling

Course Code: MS 230

L - 3 Credits - 3

Objective: The objective of this course is to introduce students to the capabilities and applications of machine learning, R and Tableau.

Course Outcomes:

CO 1: Develop an understanding of preparing data for applying predictive analysis

CO 2: Learn predictive data analysis and advanced Business Analytic techniques

CO3: Understand how to model data to solve management problems and create effective solutions

CO4: Be able to apply predictive analysis and advanced analytical tools to solve organizational problems using a systematic and analytical decision-making approach

Course Content

Unit I

Machine Learning: Unsupervised Learning, Supervised Learning, Advanced Optimization and Simulation, Natural Language Processing, Neural Networks. **(8 Hours)**

Unit II

Advanced Analytics Tools: Advanced Analytics with R, RStudio, Core Essentials of R Programming, Data Structures in R, Control Structures in R, Introduction to Tableau. **(14 Hours)**

Unit III

Advanced Analytics Application: Prediction with R and Tableau using regression, Classifying Data with Tableau, Modeling in R, Clustering in Tableau. **(8 hours)**

Unit IV

Advanced Predictive Analytics: Data Mining, KDD Process, CRISP-DM, SEMMA, Algorithms for Predictive Analytics. **(12 Hours)**

Suggested Readings: (Latest Editions)

1. Stirrup, J. & Ramos, R.O. Advanced Analytics with R and Tableau. Packt Publishing
2. Larose, D.T. & Wali, O.P. Data Mining and Predictive Analytics (An Indian Adaptation), Wiley
3. Delen, D. Predictive Analytics: Data Mining, Machine Learning and Data Science for Practitioners, Pearson
4. Prince, J.T. & Bose, A. Predictive Analytics for Business Strategy - Reasoning from Data to Actionable Knowledge, McGraw Hill
5. Bonaccorso, G Mastering Machine Learning Algorithms: Expert techniques for implementing popular machine learning algorithms, fine-tuning your models, and understanding how they work, Packt Publishing
6. Kelleher, J.D., Mac Namee, B., & D'Arcy, A. Fundamentals of Machine Learning for Predictive Data Analytics, MIT Press

CO-PO MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	2	1	2	3	3	2	3	3
CO2	3	3	1	2	3	3	2	3	3
CO3	3	3	1	1	3	3	2	3	3
CO4	3	3	1	2	3	3	2	3	3

GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, DELHI
MASTERS IN BUSINESS ADMINISTRATION (MBA)

Information Security

Course Code: MS 232

L – 3, Credits – 3

Objective: To enable students to identify the emerging security issues in a digital networked environment including security technologies, solutions, IT audit and related cyber laws.

Course Outcomes:

- CO 1: Understand the need for Computer Security & Security Mechanisms
- CO 2: Explore information and cyber security threats & other related issues
- CO 3: Understand various methods and techniques for information security
- CO 4: Apply preventive measures for controlling information threats in business

Course Content

Unit I

Information Security: Introduction to Information Security, Elements of Information Security, Security system development life cycle, Security professionals and organisations, Business Need for security, Threats and attacks- Natural, IPR Software, Hardware, QoS attacks, Professional, Legal and ethical issues in security. **(10 Hours)**

Unit II

Managing IT Risk: Introduction to Risk Analysis, Risk Assessment, Risk Analysis Techniques and Methodologies, Risk Mitigation, Business Continuity Planning.
Cyber Security: Cyber Crimes, Classification, tools and methods of Cyber Crimes. Social, Political, Ethical issues in cyber security. Concept of Computer Forensics, Forensics of Mobile & Wireless devices. **(12 Hours)**

Unit III

Security Technologies: Wireless, VPNs and Firewalls, Access Controls. Prevention Systems: Honey pots, Honeynets, Intrusion Detection and Prevention (IDPS), Digital Signatures and Certificates. Encryption, Decryption, Cryptanalysis, Ciphering methods. **(10 Hours)**

Unit IV

IS Auditing: Foundations of Information System Auditing, Objectives, Scope, Audit Process Management, Controls and Application Controls.
Information Technology Law: IT Act - Definition, Important terms under IT Legislation, Electronic records, Certifying authority, Jurisdictional Issues Cyber Regulation Appellate Tribunal, Offences and Penalties. **(10 Hours)**

Suggested Readings: (Latest Editions)

1. Michael E. Whiteman and Herbert J Mattord, Principles of Information Security, Cengage Learning India Pvt. Ltd.
2. Pachghare, V.K., Cryptography and Information Security, PHI.
3. Gupta, Prakash C., Cryptography and Network Security, PHI.
4. Martin Borrett, Practical guide to Staying ahead in the Cyber Security Game
5. Mark S. Merkow and Jim Breithaupt, Information Security: Principles and Practices, Pearson Education.
6. Hossein Bidgoli, Handbook of Information Security, Wiley.

CO-PO MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	2	2	2	1	1	3	2	1	2
CO2	2	2	2	2	1	3	1	1	1
CO3	2	2	2	1	1	2	1	2	2
CO4	1	1	2	1	1	3	1	1	2

GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, NEW DELHI
MASTER OF BUSINESS ADMINISTRATION (MBA)

Data Modelling with PYTHON

Course Code: MS 234

L-3 Credits-3

Objective: To enable the students to know about the information needs of Management, to introduce the concepts of data analysis methods, to have hands-on training of Statistical Data Analysis through Python Programming

Course Outcomes:

CO1: Understand Python as a useful scripting language for data analysis.

CO2: To have hands-on training of Statistical Data Analysis through Python Programming

CO3: To Design and implement object-oriented applications.

CO4: To develop the ability to write data mining applications using Python

Course Content

Unit-I

Introduction : Features of Python, Python as a data science platform, Introduction to Spyder, Setting working Directory, Creating and saving a script file, File execution, clearing console, removing variables from environment, clearing environment, Commenting script files, Variable creation, Arithmetic and logical operators, Data types and associated operations: Strings, Lists, Arrays, Tuples, Dictionary, Sets, Range, Introduction to Numpy
(10 Hours)

Unit-II

Introduction to Jupyter notebook : Environment setup, Pandas dataframe, Reading files, Exploratory data analysis, Data preparation and preprocessing, Data visualizations with matplotlib :scatter plots, line plots, box plots, bar charts and histograms
(10 Hours)

Unit-III

Control structures: if-else family, for loop, for loop with if break, while loop, Descriptive statistics, Hypothesis testing, correlation and covariance, Linear and multiple Regression, classification, Logistic Regression
(12 Hours)

Unit-IV

Introductory overview of Text Mining: Data Mining vs. Text Mining, Text Mining and Text Characteristics, Predictive Text Analytics, Text Mining Problems, case studies using different data sets.
(10 Hours)

Suggested Reading : (Latest Editions)

1. Miller, Thomas, W. Modelling Techniques in Predictive Analytics with Python and R: A Guide to Data Science, Pearson
2. McKinney, William, Python for Data Analysis: Data Wrangling with Pandas, NumPy, and IPython, O'Reilly
3. Downey, Allen and Elkner, Jeffrey and Meyers, Chris Learning with Python, Dreamtech Press
4. Nageswara, Rao R.. Core Python Programming, Dreamtech Publications.
5. Madhavan, S., Mastering Python for Data Science, Packt Publishing
6. Dipanjan, Sarkar, Text Analytics with Python: A Practical Real-World Approach to Gaining Actionable Insights from Your Data, Apress

**GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, NEW DELHI
MASTER OF BUSINESS ADMINISTRATION (MBA)**

Business Intelligence and Applications

Course Code: MS 236

L-3 Credits - 3

Objective: This course is intended to expose the students to the latest tools of Business Intelligence and applying those tools for effective decision-making.

Course Outcomes:

CO1: Understand the concept of business intelligence and business decisions and different tools for decision making.

CO2: Understand the concept of data warehouse and its architecture.

CO3: Implement SQL for creation modify and display data from DBMS.

CO4: Analyse the concept of data mining and knowledge discovery and their application.

CO5: Analyse the concept of knowledge management and issues in business intelligence.

Course Content

Unit I

Business Intelligence and Business Decisions: Decision Support Systems; Group Decision support and Groupware Technologies, Expert Systems. **(10 Hours)**

Unit II

Data Warehousing: SQL for data analysis , Creating Databases and Tables, Constraints, Data Manipulation Language, OLTP & OLAP, Data Marts, Data Warehousing, Data Warehouse Architecture, data representation in data warehouse: star schemas, type of star schemas Success factors of Data Warehousing. **(12 Hours)**

Unit III

Data Mining and Knowledge Discovery: Phases of knowledge Discovery in Data Bases (KDD); Data Mining Techniques: K-N-N, neural networks, decision tree Market Basket Analysis, Applications of Data Mining. **(10 Hours)**

Unit IV

Knowledge Management: Types of Knowledge, Knowledge Assets, Knowledge Generation, Knowledge Storage, Knowledge Utilization, Knowledge Management Technologies, Emerging Issues in Business Intelligence. **(10 Hours)**

Suggested Readings : (Latest Editions)

1. Turban E. and Aronson E., Decision Support and Business Intelligent Systems., Pearson Education.
2. Anahory S. and Murray D., Data Warehousing in the Real World, 12/e, Pearson Education.
3. Ponniah P. (2010), Data Warehousing Fundamentals, 2/e, John Wiley
4. Miller, Thomas, W. ,Modelling Techniques in Predictive Analytics with Python and R: A Guide to Data Science, Pearson
5. Awad, M. A., Ghaziri H M, Knowledge Management, Pearson Education.
6. Adriaans P. and Zantinge D., Data Mining, 1/e, Pearson Education.

CO-PO MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	2	2	3	3	3	2	2	2
CO2	2	2	2	3	3	3	2	2	2
CO3	1	2	2	3	3	3	1	2	2
CO4	1	1	2	3	3	3	2	2	2
CO5	2	2	2	3	3	3	2	2	2

GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, NEW DELHI
MASTER OF BUSINESS ADMINISTRATION (MBA)

Global Competitiveness and Strategic Alliance

Course Code: MS-238

L-3, Credits-3

Objective: The purpose of the course is to familiarize students with the basics of global competitiveness and learn strategies to gain competitiveness in world markets. The course also aims at exposing the students to the forms and success ingredients of strategic alliances, which are fast emerging as basic tools for business success.

Course Outcomes:

CO1: Understand the concept of strategic alliances and acquaint themselves with the worldwide trends in this area.

CO2: Explain the factors responsible for the rise of strategic alliances.

CO3: Develop an awareness of costs and benefits of alliance arrangements.

CO4: Explain the process of planning successful alliances and responsibility of the alliance partners

Course Content

Unit I

Global Competitiveness: Framework for Assessing Competitiveness – Various Approaches; International and National Competitiveness Studies. **(12 Hours)**

Unit II

Developing Competitiveness –Government Policy and Competitiveness, Role of Quality and Productivity in achieving World Class Competitiveness; Science, Technology and Innovation Policy, Human Capital and Competitiveness, Role of Information Systems in Building Competitiveness, Industrial Clusters and Business Development, Strategic Management of Technology and Innovations. **(10 Hours)**

Unit III

Global Competitiveness of Indian Industry – Status; Cause of Uncompetitiveness; Strategic Options for Building Competitiveness, Selected Case Studies of Globally Competitive Indian Companies. **(10 Hours)**

Unit IV

Strategic Alliances – Value Creation through Alliances, Management of Strategic Alliances; Strategic Alliances in Indian Context. **(10 Hours)**

Suggested Readings : (Latest Editions)

1. Momaya Kiran. International Competitiveness: Evaluation and Enhancement, Hindustan Publishing Corporation (India).
2. Ajitabh, Global Competitiveness; Excel books (India).
3. Marcela, Vivian Walsh, International Competitiveness and Technological Change, Oxford Press.
4. Hamel G. and Prahalad C.K, Competing for the future. Harvard Business Press.
5. IMD, World Competitiveness Year Book, Latest issue.
6. World Economic Forum, Global Competitiveness Report, Latest report.

GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, NEW DELHI
MASTER OF BUSINESS ADMINISTRATION (MBA)

WTO and Intellectual Property Rights

Course Code: MS 240

L-3 Credits - 3

Objective: The course is intended to sensitize the students about the importance of WTO and Intellectual property in the global economy.

Course Outcomes:

CO1: Understand the working and significance of world trade organization in liberalised era.

CO2: Be familiar with the concept of intellectual property rights and their application

CO3: Appreciate the impact of WTO on Indian Economy

CO4: Understand Trade Related Aspects Of Intellectual Property Rights (TRIPS) & Trade-Related Investment Measures (TRIMS) in context of international business

Course Content

Unit I

GATT and Evolution of World Trade Organization (WTO): Role of WTO in International Trade, Main Features of WTO, Agreements as a part of WTO: Environment, Investment, Competition Policy, Government Procurement, Trade Facilitation, Social Clause, Labour Standards; Implementation and Implication. **(10 Hours)**

Unit II

General Introduction in the Intellectual Property Law: The Notion of Intellectual Property, Historical Background, The Main Fields of Intellectual Property, Industrial Property Law: Inventions, Industrial Creations Characterized by Relative Novelty (innovations), Know-How, Industrial Designs and Models, Utility Models, Layout-designs of Semiconductor Integrated Circuits (semiconductor chips), Plant Varieties, Trademarks, Geographical Indications, Trade-names, Emblems, Other Distinctive Signs; Scientific Discoveries and Neighbouring Rights. **(10 Hours)**

Unit III

IPR and Economic Development: Copyright Law ("Rights of Authors"), Correlation of Intellectual Property Law with Unfair Competition, Common Features of the Intellectual Property Rights, Legal Nature of the Intellectual Property Rights, Position of the Intellectual Property Law in the Legal System. **(10 Hours)**

Unit IV

International Protection of Intellectual Property: World Intellectual Property Organization, TRIPS, Paris Convention for Protection of Industrial Property, Patent Cooperation Treaty, The Hague Agreement on Deposit of Industrial Designs, International Convention for Protection of New Varieties of Plants, Budapest Treaty on International Recognition of Deposit of Microorganisms, Madrid Agreement on International Registration of Trademarks and Protocol Relating to Madrid Agreement, Trademark Law Treaty, Berne Convention for Protection of Literary and Artistic Works, Rome International Convention for Protection of Performers, Producers of Phonograms and Broadcasting Organizations, The Geneva Convention for Protection of Producers of Phonograms. **(12 Hours)**

Suggested Readings : (Latest Editions)

1. Das Bhagirath Lal , The WTO and the Multilateral Trading System: Past, present and future, Third World Network and Zen Books.
2. David Bainbridge , Intellectual Property, Pearson Education.
- 3 Maskus Keith E., Intellectual Property Right in the global economy, Institute for International Economies, Washington.

4. Ganguli, Prabudha , IPR-unleashing the Knowledge Economy, 1/e, McGraw-Hill Education.
5. Ramappa, T. , Intellectual property rights under WTO: Task before India, Wheeler Publishing.
6. Jain N.K, WTO: Concepts, Challenges and Global Development, Cambridge University Press

**GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, DELHI
MASTERS IN BUSINESS ADMINISTRATION**

International Human Resource & Cross Cultural Management

Course Code: MS 242

L - 3 Credits - 3

Objective: The course will help students understand issues and practices pertaining to the major HRM functions with special focus on cross cultural management.

Course Outcomes:

- CO1: Demonstrate an understanding of concepts and practices within the field of IHRM
- CO2: Identify and appreciate the significance of social responsibility and ethical issues in HR practices and the management of people in cross-cultural environment
- CO3: Examine international negotiation and foresee challenges of practical aspects of negotiation and decision making
- CO4: Critically evaluate evolving nature of international employment and its role in shaping human resource practices in MNCs

Course Content

Unit I

Nature of International IHRM: IHRM compared with domestic HRM; Growing interest in IHRM; New Dimensions. Social Responsibility and Ethics- Sources and role of ethics; Ethical initiatives in MNCs and social responsibility of IHR Manager **(12 Hours)**

Unit II

Global Human Resources Management: Staffing- Recent trends in international staffing; Training- Strategies for training, trends in training for competitive advantage. Compensation for Global Operations- Strategy and issues in international compensation; Developing a Global Management Cadre; Motivating and Leading. **(12 Hours)**

Unit III

The Cultural Context of Global Management: Understanding the Role of Culture; Communicating Across Cultures; Cross-Cultural Negotiation and Decision Making **(9 Hours)**

Unit IV

Future of International HRM: Developing and retaining “A” players, Workforce Rationalising. Evolving nature of international employment. Gender Diversity. Maintaining Competitiveness. Building service oriented organizations. **(9 Hours)**

Suggested Readings : (Latest Editions)

1. Deresky Helen. International Management- Managing Across Borders & Cultures, Text and cases. Pearson
2. K.Aswathappa & Sadhna Dash. International Human Resource Management. McGraw Hill
3. Browaeys & Price. Understanding Cross -cultural management. Pearson
4. Dowling, Festing &Engle. International Human Resource Management
5. Luthans & Doh. International Management: Culture, Strategy, and Behaviour. McGraw Hill
6. Gooderham & Nordhaug. International Organisations and Management. Wiley-Blackwell

CO-PO MAPPING

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9
CO 1	3	2	3	2	2	1	2	2	2

CO 2	2	2	3	3	3	1	3	2	3
CO 3	3	3	3	3	3	2	3	3	3
CO 4	3	3	3	3	3	2	2	3	3

**GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, NEW DELHI
MASTER OF BUSINESS ADMINISTRATION (MBA)**

International Marketing

Course Code: MS 244

L-3 Credits – 3

Objective: The course aims at acquainting students with the concepts and procedures for international marketing and trains them to develop and implement plans and strategies for entering international markets and managing overseas operations.

Course Outcomes:

- CO1: Apply basic international marketing theories and concepts to understand the environment
- CO2: Understand international environment in order to develop appropriate international marketing objectives and strategies
- CO3: Develop unique international marketing plans
- CO4: Design and implement effective market access strategies

Course Content

Unit I

International Marketing: Meaning, Scope and Importance; International Marketing Orientation: E.P.R.G. – Approach: An overview of the International Marketing Management Process; International Marketing Environment. International Market Segmentation and Positioning; Screening and Selection of Markets; International Market Entry Strategies: Exporting, licensing, Contract Manufacturing, Joint Venture M & A, Setting-up of Wholly Owned Subsidiaries Aboard, Strategic Alliances. **(10 Hours)**

Unit II

International Product and Pricing Strategies: Product Designing: Product Standardization Vs. Adaptation; Managing Product Line, International Trade Product Life Cycle, New Product Development; Pricing for International Markets: Factors Affecting International Price Determination; Price Quotations and Terms of Sale. **(10 Hours)**

Unit III

Managing International Distribution and Promotion: Distribution Channel Strategy – International Distribution Channels, their Roles and Functions; Selection and Management of Overseas Intermediaries; International Distribution Logistics; Building brands in International markets; International Promotion Mix – Advertising and other Modes of Communication, Standardization Vs Adaptation, Global Advertising Regulations, Media and Message Considerations ; Planning for Trade Fairs and Exhibitions **(10 Hours)**

Unit IV

Emerging Trends in International Marketing: Regionalism v/s Multilateralism; Trade Blocks; Important Grouping in the World; Legal Dimensions in International Marketing (Role of IMF and WTO); Marketing Research for Identifying Opportunities in International Markets. Use of Online Channels for International Marketing Operations **(12 Hours)**

Suggested Readings (Latest Editions)

1. Cateora, Philip R. and Graham John L. International Marketing, Tata McGraw- Hill, New Delhi .
2. Czinkota, Michael R., and Ronkainen, Ilkka A. International Marketing, Cengage Learning, New Delhi.

3. Hollensen, S., Global Marketing, Pearson Education.
4. Onkvisit, Sak and Shaw Johan J., International Marketing- Strategy and Theory, Taylor and Francis.
5. Keegan, Warren J., Global Marketing, Pearson Education, New Delhi.
6. Joshi, R M, International Marketing, Oxford University Press

CO-PO MAPPING

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9
CO 1	3	2	1	2	3	2	2	2	1
CO 2	3	2	2	2	2	1	2	2	1
CO 3	2	2	2	1	2	1	2	1	2
CO 4	3	2	2	2	1	2	1	2	1

GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, DELHI
MASTERS IN BUSINESS ADMINISTRATION (MBA)

Business Process Management

Course Code: MS 246

L - 3 Credits - 3

Objective: The course objective is to impart knowledge of business process so as to enable the students understand its significance in improving the operational efficiency and apply their knowledge and skills for Business Process Reengineering.

Course Outcomes:

CO1: Demonstrate conceptual understanding of business process re-engineering and appreciate its evolution.

CO2: Analyze the drivers and triggers of business process management and appreciate the limitations of automation while transforming organizations

CO3: Ability to identify the critical success factors of business process management and appreciate the relevance of strategy and process architecture in implementation of business process management

CO4: Demonstrate the knowledge of business process management implementation framework and its components.

Course Content

Unit I

Introduction to Business Process Management and its evolution: BPM models and methodologies, Main Streams of BPM: Business Process Thinking, Automation of Workflow, Quality Thinking, First Wave i.e Scientific Management, Second Wave i.e Business Process Reengineering, Third Wave i.e Synthesis of Business Process Thinking, Automation and Quality Thinking, **(12 Hours)**

Unit II

BPM Implementation: Defining Business Process Management(BPM), Significance and Scope of BPM, Demystifying Business Process Management, Drivers and Triggers of BPM, Integrating BPM with 'management', Process Improvement, BPM Implementation: Role of Organization Strategy and Process Architecture, Internal Marketing of BPM Technology, Critical Success Factors of BPM Project. **(12 Hours)**

Unit III

Implementation of BPM Solutions: Critical Implementation Aspects- Regatta® Metaphor for Implementing BPM, Structured approach for Implementing BPM, BPM Project Framework and Overview of various Phases in BPM Implementations, BPM Project Essentials- Project Management, People Change Management, Leadership. **(10 Hours)**

Unit IV

Selection of BPM Projects: Strategy Driven Approach, Operational Initiative Approach, BPM Project Scenarios and their Characteristics, BPM Maturity, Typology and Model, Embedding BPM within the Organization. **(8 Hours)**

Suggested Readings: (Latest editions)

1. Jeston, J., Nelis, J. Business Process Management: Practical Guidelines to Successful Implementations. Butterworth-Heinemann, Elsevier.

2. Smith, H.,Fingar, P. Business Process Management – The Third Wave. Meghan-Kiffer Press.
3. Van de Berg, H. and Franken, H. Handbook of Business Process Engineering. Bizz Design B.V.
4. Burlton, R. T. Business Process Management. Sams Publishing.
Harmon, P. Business Process Change. Morgan Kaufmann.
5. Scheer, A.-G., Abolhassan, F., Jost, W. and Kirchmer, M.. Business Process Change Management. Springer
6. Dumas, M., La Rosa, M., Mendling, J., & Reijers, H. A. Fundamentals of business process management. Heidelberg: Springer.

GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, DELHI
MASTERS IN BUSINESS ADMINISTRATION (MBA)

Advanced Business Analytics & Predictive Modelling

Course Code: MS 248

L - 3 Credits - 3

Objective: The objective of this course is to introduce students to the capabilities and applications of machine learning, R and Tableau.

Course Outcomes:

CO1: Develop an understanding of preparing data for applying predictive analysis

CO2: Learn predictive data analysis and advanced Business Analytic techniques

CO3: Understand how to model data to solve management problems and create effective solutions

CO4: Be able to apply predictive analysis and advanced analytical tools to solve organizational problems using a systematic and analytical decision-making approach

Course Content

Unit I

Machine Learning: Unsupervised Learning, Supervised Learning, Advanced Optimization and Simulation, Natural Language Processing, Neural Networks. **(8 Hours)**

Unit II

Advanced Analytics Tools: Advanced Analytics with R, RStudio, Core Essentials of R Programming, Data Structures in R, Control Structures in R, Introduction to Tableau.

(14 Hours)

Unit III

Advanced Analytics Application: Prediction with R and Tableau using regression, Classifying Data with Tableau, Modeling in R, Clustering in Tableau. **(8 hours)**

Unit IV

Advanced Predictive Analytics: Data Mining, KDD Process, CRISP-DM, SEMMA, Algorithms for Predictive Analytics. **(12 Hours)**

Suggested Readings: (Latest Editions)

1. Stirrup, J. & Ramos, R.O. Advanced Analytics with R and Tableau. Packt Publishing
2. Larose, D.T. & Wali, O.P. Data Mining and Predictive Analytics (An Indian Adaptation), Wiley
3. Delen, D. Predictive Analytics: Data Mining, Machine Learning and Data Science for Practitioners, Pearson
4. Prince, J.T. & Bose, A. Predictive Analytics for Business Strategy - Reasoning from Data to Actionable Knowledge, McGraw Hill
5. Bonaccorso, G Mastering Machine Learning Algorithms: Expert techniques for implementing popular machine learning algorithms, fine-tuning your models, and understanding how they work, Packt Publishing
6. Kelleher, J.D., Mac Namee, B., & D'Arcy, A. Fundamentals of Machine Learning for Predictive Data Analytics, MIT Press

CO-PO MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	2	1	2	3	3	2	3	3
CO2	3	3	1	2	3	3	2	3	3
CO3	3	3	1	1	3	3	2	3	3
CO4	3	3	1	2	3	3	2	3	3

GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, NEW DELHI

MASTER OF BUSINESS ADMINISTRATION (MBA)

Project Management

Course Code: MS 250

L - 3, Credits - 3

Objective: The course is multi-dimensional in approach and covers the areas of management of project in the context of management and financing, resource allocation, and risk analysis. The course aims to impart knowledge on project related activities to prepare the students for organisational responsibilities.

Course Outcomes:

CO1: Appreciation of concept of project activity as distinct from routine activities and their role in business decision making.

CO2: Capacity to generate new project ideas and evaluate the same for sustainable growth of business.

CO3: Ability to plan and execute large scale projects with time and cost efficiency.

CO4: General awareness of project life cycle and specific requirement of different stages of projects.

CO5: Acquaintance with project scheduling, monitoring, control, and termination of projects.

CO6: Acquisition of skills necessary to manage risk associated with project activities.

Course Content

Unit I

Project Identification and Selection: Introduction, Project Identification Process, Generation and Screening of Project Ideas, monitoring the environment and identifying investment opportunities, Project Initiation, Pre-Feasibility Study, Feasibility Analysis- Technical, Market, Financial, Economic, Project Break-even point and its managerial implications. **(10 Hours)**

Unit II

Project Planning and Recourse Consideration: Introduction, Project Planning, Need of Project Planning, Project Life Cycle, Roles, Responsibility and Team Work, Project Planning Process, Resources Considerations in Projects, Resource Allocation, Scheduling, Project Cost Estimate and Budgets, Project Scheduling/Network Techniques in Project Management: CPM and PERT Analysis; Float Times; Crashing of Activities; Contraction of Network for Cost Optimization, Updating; Cost Analysis of Resources Allocation. **(12 Hours)**

Unit III

Organizational Structure and Quality Issues: Introduction, Concept of Organizational Structure, Roles and Responsibilities of Project Leader, Relationship between Project Manager and Line Manager, Leadership Styles for Project Managers, Conflict Resolution, Team Management and Diversity Management, Change management, Project Quality Management, Quality Concepts, Value Engineering process. **(10 Hours)**

Unit IV

Project Risk Management, performance management and control: Introduction, types of Risks, risk Management, Role of Risk Management in Overall Project Management, Steps in Risk Management, Risk Identification, Risk Analysis, Reducing Risks, Project Performance Measurement, Performance Measurement Matrix, Productivity, Project Performance Evaluation, Benefits and Challenges of Performance Measurement and Evaluation, Controlling the Projects-Project Execution, Project Control Process. **(10 Hours)**

Suggested Readings : (Latest Editions)

1. Chandra, P. Projects: Planning, Analysis, Selection, Financing, Implementation, and Review, McGraw Hill Education.
2. Pinto, J.F., Project Management: Achieving Competitive Advantage, Pearson Education.
3. Panneerselvam. R., & Senthilkumar. P. Project Management, PHI Learning Pvt. Ltd.
4. Larson, E., & Grey, C. Project Management: The Managerial Process, McGraw Hill Education.
5. Choudhury, S., Project Management, Tata Mc Graw Hill Publishing Company.
6. Patel, B., Project Management: Financial Evaluation with Strategic Planning, Networking and Control, Vikas Publishing House Pvt. Ltd.

CO-PO MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	2	2		1	1		1		
CO2		2	3	3	2		2		
CO3		3	3	3	3		2		
CO4	2	2	2	2	3		1	2	
CO5	2	3	3	3	3				
CO6	2	3	3	3	3		2	2	2

GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, NEW DELHI
MASTER OF BUSINESS ADMINISTRATION (MBA)

Supply Chain Analytics

Course Code: MS 252

L - 3, Credits - 3

Objective: The course aims at imparting the knowledge of supply chain analytics for designing, measuring and evaluating the performance of supply chains.

Course Outcomes:

- CO1: Understand the evolution of Supply Chain Management and develop appreciate its relevance and significance from multiple perspectives.
- CO2: Demonstrate the knowledge of various forecasting techniques and assess the impact of bull-whip effect on supply chain performance.
- CO3: Appreciate various elements of supply chain networks and demonstrate the ability to design local and global supply chain networks.
- CO4: Demonstrate an understanding of supply chain analytics and use them for making supply chain decisions.

Course Content

Unit I

Introduction to Supply Chain Management: Evolution of Supply Chain Management, Analytics in Supply Chain Management, Supply Chain Planning, Different Perspectives of Supply Chain Management, Supply Chain Strategy, Supply Chain Drivers, Developing Supply Chain Strategy, Strategic Fit in Supply Chain. **(12 Hours)**

Unit II

Demand Forecasting: Bull-whip Effect and Time Series Forecasting, Exponential Smoothing Method in Forecasting, Measuring forecasting Errors, Tracking Signals and Seasonality Models, **(8 Hours)**

Unit III

Network Design in Supply Chain: Network Design of Global Supply Chain, Alternative Channels of Distribution, Location Decisions in Supply Chain, Network Optimization Models, Uncertainty in Network Design, Flexibility in Supply Chain **(10 Hours)**

Unit IV

Optimum Level of product availability in Supply Chain: Time Value of Money in Supply Chain, Different Types of Analytics in Supply Chain, Predictive Modeling for Supply Chain Forecasting, Uncertainty in Supply chain and Decision Tree Analysis, Modeling Flexibility in Supply Chain, Supply Chain Challenges and Emerging Trends in Supply Chain Management **(12 Hours)**

Suggested Readings : (Latest Editions)

1. Bhattacharya, R., Bhattacharya, A. M. Supply Chain Analytics: Strategies, Models and Solutions, Sage Publications India Pvt Ltd
2. Chopra, S., Meindl, P. Supply Chain Management: Strategy, Planning and Operation, Pearson

3. Warsing, Jr., Ravindran, A. R. Supply Chain Engineering: Models and Applications. Taylor & Francis
4. Srinivasan, G. Quantitative Models in Operations and Supply Chain Management. PHI Learning Pvt Ltd
5. Vijayaraghavan, T. A. S. Supply Chain Analytics. Wiley.
6. Robertson, P. W. Supply Chain Analytics: Using Data to Optimise Supply Chain Processes. Routledge.