GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY

DWARKA, NEW DELHI-110078

MBA(ANALYTICS)

Scheme and Syllabus

2022-24 onwards

Master of Business Administration (Analytics)

Programme Outcomes (POs)

On completing the programme students should be able to:

PO1: Demonstrate an understanding of management concepts, principles and theories, and apply them inthe context of organizational work practices.

PO2: Apply analytical and critical thinking skills to analyze the dynamic business environment andidentify entrepreneurial and business opportunities and risks.

PO3: Prepare business strategies, develop concomitant functional and operational strategies and implement them in an integrated manner to efficiently and effectively achieve the functional goals andthe business objectives.

PO4: Demonstrate an understanding of decision-making processes at various levels of the organizationwith respect to resources mobilization and their efficient deployment and use to achieve the set goals.

PO5: Demonstrate the ability to analyze management problems, to identify and collect relevant data andto apply a creative problem-solving approach.

PO6: Identify and recommend the information technology-based interventions to achieve organizationalgoals

PO7: Benchmark organizational and managerial practices against the principles of goodgovernance,ethical conduct, corporate social responsibility, and the imperatives of long-term societal welfare.

PO8: Demonstrate effective communication and interpersonal skills as well as the ability to work withand lead teams.

PO9: Develop a lifelong learning approach manifested in their attitude to learn, unlearn, and relearn andin their pursuit of excellence in professional, personal and social life.

Programme Specific Outcomes (PSOs)

PSO1: To develop competent analytical skills with strong managerial virtues relevant to professional managerial practice through life-long learning and application.

PSO2: To apply the fundamental knowledge of management combined with business analytics skills to optimally solve complex business problems.

PSO3: To foster an ability to critically analyse, synthesise and create viable solutions to decision making problems

GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, NEW DELHI

MASTER OF BUSINESS ADMINISTRATION (ANALYTICS)

Criteria for Electives and Assessment

**** Record to be maintained by faculty and made available to the examination branch of the University, if required.***
**** The student is required to earn at least 104 credits to complete the degree.***

The internal assessment of the students **(out of 25 marks)** shall be as per the criteria given below:

1. **Class Test-I - 15 marks**

   A written test is to be conducted on the date communicated by the University as per Academic Calendar for the Class Test.

2. **Individual Presentation/Viva-Voce/Group Discussion* - 10 marks**

3. **The Assessment of the Summer Training Project in the Third Semester and the Project Dissertation in the Fourth Semester shall be as follows.**

Internal Assessment	-	40 Marks
External Assessment (Viva Voce)	-	60 Marks

Note: The Scheme and Syllabus as per the Ordinance 11 of the University.

Maximum and Minimum Credit for the Program

The total number of credits of MBA (Analytics) Programme is 105. Each student shall be required to appear for examination in all courses. However, for the award of the degree a student should secure at least 100 credits.

GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, NEW DELHI

MASTER OF BUSINESS ADMINISTRATION (ANALYTICS)

FIRST SEMESTER

Code No.	Paper	Type	L	T/P	Credits
MBA(A) 101	Management Process and Organisational Behaviour	Core	3	-	3
MBA(A) 103	Accounting for Management	Core	3	-	3
MBA(A) 105	Economics and Quantitative Analysis	Core	3	-	3
MBA(A) 107	Information Technology for Management	Core	3	-	3
MBA(A) 109	Communication in Organizations	Skill Enhancement	3	-	3
MBA(A) 111	Marketing Management	Core	3	-	3
MBA(A) 113	Introduction to Analytics and R	Skill Enhancement	2	-	2
MBA(A) 115	Data Preparation and Exploration	Core	2	-	2
MBA(A) 151	Information Technology for Management –Lab	Skill Enhancement	-	2	1
MBA(A) 153	Introduction to Analytics and R –Lab	Skill Enhancement	-	2	1
MBA(A) 155	Data Preparation and Exploration – Lab	Skill Enhancement	-	2	1
	Total		22	6	25

SECOND SEMESTER

Code No.	Paper	Type	L	T/P	Credits
MBA(A) 102	Corporate Finance	Core	3	-	3
MBA(A) 104	Business Research	Core	3	-	3
MBA(A) 106	Data Visualization	Skill Enhancement	2	-	2
MBA(A) 108	Econometrics	Core	3	-	3
MBA(A) 110	Business Performance Modelling	Skill Enhancement	3	-	3
MBA(A) 112	Risk Assessment and Mitigation	Core	3	-	3
MBA(A) 114	Data Modelling with Python	Skill Enhancement	2	-	2
MBA(A) 116	MOOCs/Open elective	Ability Enhancement	3	-	3
MBA(A)118	Minor Project	Ability Enhancement	-	-	4
MBA(A)152	Data Visualization Lab	Skill Enhancement	-	2	1
MBA(A)154	Data Modelling with Python Lab	Skill Enhancement	-	2	1
	Total		22	4	28

Note:
*The student is required to choose one MOOC course of 3 credits at PG level as per his or her preference/choice from Swayam portal or any other online educational platform approved by the UGC / regulatory body from time to time. After completing the course, the student must produce a successful course completion certificate for claiming the credit. The course chosen by the student should be intimated to the MOOC Coordinator of the respective institution. Alternatively, students can pursue any course at PG level offered in the campus by any USS/College with due intimation to the Program Coordinator/Dean/Director of the School/College.

A One Year Post-Graduate Diploma in Management(Analytics) will be awarded, if a student wishes to exit at the end of first year/second semester upon successful completion.
A Student having qualified in One Year Post Graduate Diploma in Management (Analytics)from GGSIP University can join the MBA (Analytics) programme in 3rd Semester any time during the period. The procedure for depositing credits earned, its shelf life, redemption of credits, would be as per UGC (Establishment and Operationalisation) ofAcademic Bank of credits (ABC) scheme in higher education) Regulations 2021. The admission would be subject to availability of seats in the programme. Number of years spent on studies of this programme cannot be more than N+2 year

THIRD SEMESTER

Code No.	Paper	Type	L	T/P	Credits
MBA(A) 201	Strategic Management	Core	3	-	3
MBA(A) 203	Entrepreneurial Development & Start-Ups	Skill Enhancement	3	-	3
MBA(A) 205	Predictive Analytics and Big Data	Ability Enhancement	2	-	2
MBA(A) 207	Artificial Intelligence and Machine Learning	Skill Enhancement	2	-	2
MBA(A) 209	Database Management System	Skill Enhancement	2	-	2
MBA(A) 211	Design Thinking and Innovation	Skill Enhancement	3		3
MBA(A) 213	Summer Training Project Report	Skill Enhancement	4	-	4
MBA(A) 253	Artificial Intelligence and Machine Learning (Lab)	Ability Enhancement	-	1	1
MBA(A) 255	DBMS Lab	Ability Enhancement	-	1	1
MBA(A)	Elective I	Skill Enhancement	3	-	3
MBA(A)	Elective II	Skill Enhancement	3	-	3
MBA(A) 233	MOOCs II/Open Elective	Skill Enhancement	3	-	3
	Total		28	2	30

LIST OF ELECTIVES (Select any two from respective streams)

1. **Electives of HR**
   - **MBA(A) 215-HR Analytics**
   - **MBA(A) 217-Organizational Analytics**
   - **MBA(A) 219-Talent Management**
2. **Electives of Marketing**
   - **MBA(A) 221-Social Media Analytics**
   - **MBA(A) 223-Retail Analytics**
   - **MBA(A) 225-Consumer Behaviour**
3. **Electives of Finance**
   - **MBA(A) 227-Financial Risk Analytics**
   - **MBA(A) 229-Investment Analysis and Portfolio Management**
   - **MBA(A) 231-Financial Modelling**

FOURTH SEMESTER

Code No.	Paper	Type	L	T/P	Credits
MBA(A) 202	Major Project Report	Ability Enhancement	8	-	8
MBA(A) 204	Project Management	Skill Enhancement	3	-	3
MBA(A) 206	Ancient Management Philosophy and Indian Ethos	NUES	2	-	2
MBA(A) 208	Multivariate Data Analysis	Core	3		3
MBA(A)	Elective III	Skill Enhancement	3	-	3
MBA(A)	Elective IV	Skill Enhancement	3	-	3
	Total		22		22

LIST OF ELECTIVES (Select any two from respective streams)

1. **Electives of HR**
   - **MBA(A) 210-Strategic HR Analytics**
   - **MBA(A) 212-Managing Organizational Development**
   - **MBA(A) 214-Performance and Compensation Management**
2. **Electives of Marketing**
   - **MBA(A) 216-Marketing Analytics**
   - **MBA(A) 218-Supply chain Analytics**
   - **MBA(A) 220-Digital and social media**
3. **Electives of Finance**
   - **MBA(A) 222-Financial Analytics**
   - **MBA(A) 224-Emerging Technologies in Finance**
   - **MBA(A) 226-Equity Valuation**

SEMESTER -I

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

Management Process and Organizational Behaviour

Course Code: MBA (A) - 101L - 3, Credits – 3

Objective: This course is designed to expose the students to fundamental concepts of management, its process, and behavioural dynamics in organizations.

Course Outcomes:
CO1: Enumerate, explain, compare, and analyze the concepts, theories and principles that have evolved in specific historical contexts and informed both academic thinking and practices related to the field of management.
CO2: Identify and discuss the functions of management i.e., planning, organizing, leading, and controlling, relate them with the roles of managers at different levels of the organization and classify the skills necessary for effective performance of their functions.
CO3: Apply the knowledge of management theory and of organizational behaviour to analyze managerial issues and take decisions consistent with the organizational objectives of efficiency and effectiveness.
CO4: Analyze the complexities of work organizations and develop a multidisciplinary approach to address interpersonal and intra organizational issues.

Course Content

Unit I

Introduction to Management: Meaning and Nature of Management, Evolution of Management, Tasks and Responsibilities of a Professional Manager, Management by Objectives, Case Study. **(8 hours)**

Unit II

Process of Management: Planning- Concept, Process and Techniques, directing – Definition, Principles and Process, Controlling - Definition, Process and Techniques, Decision Making – Concept, Importance and Models, Case Study. **(8 hours)**

Unit III

Fundamentals of Organizational Behaviour: Organizational Behaviour - Nature and Scope, OB Models – merits and demerits, Personality – concept and types, Perception and Attitude, Learning – concept and theories, Motivation – definition, importance and theories, Managing stress at Work – concept and techniques, Organization Structure – concept and types, Case Studies.
Organizational Processes and Structure: Organizational Design and Structure, Organizational Culture and Climate, Cross Cultural Organizational Behaviour **(16 hours)**

Unit IV

Group and their Dynamics, Work Teams: Group and their dynamics – Concept and Types, Work Teams – definition and importance, Stages of team Building and its behavioural dynamics,

Leadership - Concept, Importance and Styles, Organizational Justice - Concept, Importance and Types. **(10 hours)**

Suggested Books: (Latest Editions)

1. Robbins. Judge, S.P., T.A., Vohra, N. Organizational Behaviour. Pearson Education
2. Nahavandi, A. et al., Organizational Behaviour. Sage Publication
3. Greenberg, J. and Baron, R.A. Behaviour in Organization. Pearson Education
4. Stoner, J.A.F., Freeman, R.E., Kodwani, A.D., et.al. Management. Pearson Education.
5. Newstorm, J.W. & Davis, K. Organizational Behaviour Human Behaviour at Work, McGraw Hill Education
6. Koontz, H, Weihrich, H, Mark V, Cannice, M.V. Essentials of Management – An International Innovation and Leadership Perspective, MC.Graw Hill.

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

Accounting for Management

Course Code: MBA (A) - 103L - 3, Credits – 3

Objective: The course aims at enabling students to understand the basic accounting principles and techniques of preparing & presenting the accounts for users of accounting information. The course also familiarizes the students with the basic cost and management accounting concepts and their applications in managerial decision making.

Course Outcomes:
CO1: Demonstrate sound understanding of fundamental accounting principles, accounting standards and accounting techniques.
CO2: Construct financial statements by collecting, recording and classifying the financial information from divergent source.
CO3: Critically analyse and interpret financial statements of a company.
CO4: Demonstrate the ability to extract and use meaningful financial information for managerial decision making.

Course Content
Unit I
Financial Accounting: Scope and Nature of Accounting, Accounting concepts, Principles & Standards, Accounting Cycle, Journalisation, Subsidiary Books; Ledger Posting, Preparation of Trial Balance, Rectification of Errors. Capital and Revenue Expenditure & Income. Fixed Assets and Depreciation Accounting. Preparation of Final Accounts, Manufacturing Account; Trading Account, Profit and Loss Account; Balance Sheet (with adjustments) **(12 Hours)**

Unit II
Cost Accounting: Objectives, Classification of Cost, Preparation of Cost Sheet, Material Cost Accounting, Perpetual Inventory Control, Inventory Valuation, EOQ, ABC Analysis, Setting of Reorder Level, Maximum Level, Minimum Level, Labour Costing, Overhead Cost Allocations, Over and Under Absorption. **(10 Hours)**

Unit III
Performance Evaluation Techniques: Introduction to Budgeting and Budgetary Control; Performance Budgeting; Classification of Budget; Fixed and Flexible Budgets, Zero Based Budgeting, Standard Costing and Variance Analysis; Balanced Scorecard; Responsibility Accounting. **(10 Hours)**

Unit IV
Decision Making Techniques: Financial Statement Analysis, Ratio Analysis, Common Size Statements, Du Pont Analysis,Marginal Costing, Application of Marginal Costing in Decision Making, Cost Volume Profit Analysis; Profit Planning, Management Accounting for Decision

Making and Control; EVA; Introduction to Activity Based Costing, Target Costing, Life Cycle Costing; Uniform Costing. **(10 Hours)**

Suggested Readings: (Latest Editions)

1. Arora, M. N. Cost Accounting Principles & Practice. Vikas Publishing House.
2. Jawahar, L. Advanced Management Accounting. S. Chand & Company.
3. Periasamy, P. Financial, Cost and Management Accounting. Himalaya Publishing.
4. Khan, M.Y. & Jain, P.K. Management Accounting. McGraw Hill Education.
5. Maynard, Jennifer. Financial Accounting, Reporting & Analysis. Oxford University Press
6. Horngren, C.T., Foster, G., Datar, S.M. Cost Accounting: A Managerial Emphasis. Pearson Education

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

Economics and Quantitative Analysis

Course Code: MBA (A) - 105L - 3, Credits – 3

Objective: The course will provide an understanding and relevance of modern economic concepts, precepts, tools and techniques in evaluating business decisions taken by a firm. Additionally, it provides sound knowledge of fundamentals of statistics and statistical techniquesfor effective decision making in organizations.

Course Outcomes:
CO1: To understand the concepts of cost, nature of production and its relationship to business operations.
CO2: To integrate the concept of price and output decisions of firms under various market structure.
CO3: Understand relevance & need of quantitative methods for making business decisions.
CO4: Demonstrate a sound knowledge of fundamentals of statistics and statistical techniques.
CO5: Apply quantitative methods to solve a variety of business problems.

Course Content

Unit I

Introduction: Nature, Scope and Significance of Managerial Economics, its Relationship with other Disciplines, Opportunity cost Principle, Production Possibility Curve, Incremental Concept, Cardinal and Ordinal Approaches to Consumer Behaviour: Equi-Marginal Principle, Law of Diminishing Marginal Utility, Indifference Curve Analysis. **(10 Hours)**

Unit II

Demand Analysis and Market Structures: Demand Function, Determinants of Demand, Elasticity of Demand, Demand Estimation and Forecasting, Applications of Demand Analysis in Managerial Decision Making;Market Structures: Price-Output decisions under Perfect Competition, Monopoly, Monopolistic Competition and Oligopoly. **(10 Hours)**

Unit III

Measures of Central Tendency: Descriptive Statistics: Measures of central tendency, concept of dispersion, measures of dispersion: absolute and relative measures, skewness-meaning and measures, kurtosis-meaning and measures, bivariate analysis: concept of correlation, measures of correlation, regression meaning, regression lines, OLS regression: assumptions, computation of regression coefficients, standardized and unstandardized regression coefficients. Decision making based on Regression Analysis **(12 Hours)**

Unit IV

Probability Analysis: Concept and meaning of probability, theorems of probability: addition, multiplications, Bayes'theorem, probability distribution: Discrete and Continuous distribution-

binomial, Poisson and Normal Distribution. Application of Probability in decision making.

(10 Hours)

Suggested Readings: (Latest Editions)

1. H. Craig Petersen, W Cris Lewis, Sudhir K. Jain. Managerial Economics. Pearson Education.
2. Sharpe, N.R., De Veaux, R.D., and Velleman, P.F. Business Statistics. Pearson.
3. Robert S. Pindyck Daniel L. Rubinfeld, Mehta, P.L. Microeconomics. Pearson Education.
4. Vohra, N.D. Quantitative Techniques in Management. McGraw Hill Education.
5. Aczel, Amir D., Sounderpandian, J.,& Saravanan P. Complete Business Statistics, India. McGraw Hill Education.
6. Salvatore, D. Managerial Economics in a Global Economy. Oxford University Press.

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

Information Technology for Management

Course Code: MBA (A) - 107L - 3, Credits – 3

Objective: The primary objective of this course is to familiarize the student coming from diverse background with basic concepts of information technology, its components and their applications in business processes.

Course Outcomes:
CO1: Recall the components of an Information Technology based system.
CO2: Identify the challenges in storage and retrieval of data.
CO3: Classify the software into various types on the basis of different criteria.
CO4: Create and analyze the database using SQL and spreadsheet tools.
CO5: Build an appropriate computer network as per the organizational needs
CO6: Develop web pages using HTML
CO7: Contrast the information systems for managerial decision making
CO8: Understand the new and emerging technologies.

Course Content

Unit I

Information Technology: Components of IT systems, Characteristics and Classification of Computers**.** Computer Architecture, Computer Memory**:** Types of Memory, Storage devices, Mass Storage Systems. Concept of Cloud Computing, Data Centres and their challenges. **(06 Hours)**

Unit II

Computer Software: Types of Software. System Software: Introduction to Operating System, Need, Functions and Types of Operating systems. Introduction to GUI. Compiler, Interpreter and Assembler, Types of Computer Programming Languages.

Application Software and their uses. Features of Good Software and emerging trends in software development. Spreadsheet and Presentation Software. Data Analysis using Excel.

DBMS: Traditional File concepts and Database Environment, Database Management Systems Concepts, Types of Data Models, ER Modeling, Integrity Constraints, SQL queries. **(14 Hours)**

Unit III

Data Communication and Networks: Concepts of Data Communication, Types of Data-Communication Networks, Communications Media, Concepts of Computer Networks, Primary Network Topologies, Network Architectures-The OSI Model, Inter-Networking devices. The Internet, Intranet and Extranets: Internet Services, World Wide Web, Creating Web Pages using HTML. **(12 Hours)**

Unit IV

Functional and Enterprise Systems: Data, Information and Knowledge Concepts, Decision Making Process, Concept and Classification of Information Systems. Security Issues in Information Technology, Emerging Trends in Information Technology: Block Chain, Artificial Intelligence, Machine Learning, Internet of Things and their applications. **(10 Hours)**

Suggested readings: (Latest Editions)

1. ITL Education Solutions. Introduction to Information Technology, 2/e, Pearson Education.
2. Turban, Rainer and Potter. Introduction to Information Technology, John Wiley and Sons.
3. Behl R. Information Technology for Management, McGrawHill Education.
4. Joseph A. Brady and Ellen F Monk. Problem Solving Cases in Microsoft and Excel, homson Learning.
5. Mukta Sharma and Surabhi Shankar. Computer Applications, Galgotia Publishing Company.
6. Saini A.K. and Mukta Sharma, Web Technologies, GalgotiaPublishng Company.

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

Communication in Organizations

Course Code: MBA (A) - 109L - 3, Credits – 3

Objective: The aim of the course is to train students to enhance their skills in written and oral communication. The course will help students develop competence in communication so that they can successfully handle the challenges of all types of communication in business environment.

Course Outcomes:
CO1: Recognize the scope and significance of communication and its relevance for enhancing individual and organizational performance in the context of global business operations.
CO2: Explain the concepts, theories and principles of communication informing various communication strategies and practices aimed at effective communication with different stakeholders of the organization.
CO3: Identify and apply various tools and techniques for developing appropriate communications strategies aimed at positioning for organization and build brand image.
CO4: Exhibit the use of interpersonal communication skills and etiquettes for impactful business dealings and lasting relationship build in reflected in dressing sense, listening skills, cultural sensitivity etc.
CO5: Devise an effective communication strategy and protocols that can be successfully employed by the individuals and teams while participating in business negotiations.

Course Content
Unit I
Introduction to Business Communication: Business communication – definition, importance. Forms and types of communication (Downward, upward, horizontal and lateral communication), Formal and informal communication network. Process of communication, Barriers and Gateways to communication. **(12 hours)**

Unit II
Written Communication and Application of Communication: Principles of Written Communication – 7C's Concept. Business and Commercial Letter (Request letters, Good News letters, Persuasive letters, Sales letters). Job application and Resume Writing**. (12 Hours)**

Unit III
Oral Communication: Principles of Oral Presentations, Factors Effecting Presentation, Video-conferencing and Skype, Non-Verbal Communication (Para language, Time, Space, Silence, Body language). Relating through Informative and Persuasive speeches, Listening. **(8 hours)**

Unit IV

Recent Trends in Business Communication: Online Communication and Personal Relationships, Handling Online Meetings, Business Communication via Social Network, Writing Social Blogs. Inter-cultural communication. Ethical and Legal Issues**.**

(10 hours)

Suggested Readings (Latest Editions)

1. Courtland L. Bovée et. al., Business Communication Today, Pearson
2. Steve Duck and David T. McMahan, The Basics of Communication, Sage, South Asia
3. Lesikar R et.al., Business Communication: Connecting in a Digital World, McGraw Hill.
4. Murphy H et.al., Effective Business Communication, McGraw Hill.
5. Reddy C.R. Business Communication, Wiley Publications.
6. Chaturvedi M.Art and Science of Business Communication, Pearson.

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

Marketing Management

Course Code: MBA (A) - 111L - 3, Credits – 3

Objective: This course is aimed at enabling students to understand the basic marketing concepts, processes and techniques. It will help develop and prioritise appropriate marketing strategies to meet the organizations marketing objectives and address its marketing challenges

Course Outcomes:
CO1**:** Discuss the importance of a customer-centric approach and critically evaluate marketing function, concepts and theories, processes and techniques.
CO2: Identify and explain the major forces in the macro and micro environment that impact marketing strategy development and implementation.
CO3: Apply key marketing concepts and tools to develop and prioritise appropriate marketing strategies to meet the organizations marketing objectives and address its marketing challenges.
CO4: Explain the importance of synchronizing the elements of a customer driven marketing strategy and apply IT based tools that provide for a seamless customer experience.
CO5: Anticipate future challenges and devise marketing strategies to adapt to the imperatives of sustainable development.

Course Content

Unit I

Introduction to Marketing: Meaning and Scope of Marketing; Marketing Philosophies; Concept of Customer Value and Customer Satisfaction, Marketing Management Process-An Overview; Concept of Marketing Mix; Understanding Marketing Environment; Consumer Buyer Behavior; Market Segmentation, Targeting and Positioning; Overview of Competitive Marketing Strategies. **(12 Hours)**

Unit II

Product and Pricing Decisions: Product Concept; Product Classifications; Product Levels; Product Differentiation; Product Mix; Product Line Decisions; Product Life Cycle-Concept & Strategies; Brand and Branding Strategies; New Product Development Process; Pricing-Pricing Objectives, Determinants of Price, Pricing Methods & Strategies. **(10 Hours)**

Unit III

Promotion and Distribution Decisions: Concept of Integrated Marketing Communication; Promotion Mix-Advertising, Personal Selling, Publicity, Direct Marketing and Sales Promotion; Channels of Distribution; Functions of Intermediaries; Channel Design Decisions, Selecting Channel Members; Channel Management; Emerging Channels of Distribution. **(10 Hours)**

Unit IV

Contemporary Marketing Trends and Issues: Consumer Adoption of Innovations; Rural Marketing, Social Marketing; Sustainable Marketing; Digital Marketing; Ethical Issues in Marketing; Introduction to Marketing Analytics. **(10 Hours)**

Suggested Readings: (Latest Editions)

1. Kotler,P., Keller, K.L. , Marketing Management, Pearson Education.
2. Lamb, C.W, Hair, J.F, Sharma, D. & Mc Daniel C., Marketing- A South Asian Perspective Edition, Cengage India Pvt. Ltd, Delhi
3. Baines, P., Fill, C., Page, K., Sinha, P.K. , Marketing: Asian Edition, Oxford University Press, New Delhi.
4. Ramaswamy, V.S and Namakumari, S. , Marketing Management: A Strategic Decision Making Approach Global Perspective Indian Context Hill , Sage
5. Walker O. C., Mullins J. & Boyd Jr. H. W., Marketing Strategy: A Decision Focused Approach, Mc Graw Hill Education.
6. Etzel, M., Walker, B., Stanton, W. and Pandit, A., Marketing Management, McGraw Hill Education.

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

Introduction to Analytics and R

Course Code: MBA (A) -113 L - 2, Credits – 2

Objective: This course will help students in analysing the data with the help of R Programming technique.

Course Outcomes:
CO1: Critically thinking on import, manage and structure data files for using business analytics.
CO2: Apply analytical knowledge with the R interface and language for different fields.
CO3: Provide leadership in analytics in existing datasets into R or create new ones.
CO4: Cultivating cognitive skills acquired on existing data and performs all conventional statistical analysis tests. using R knowledge on data management.

Course Content

Unit-I

Introducing to R: R Data Structures, Help functions in R Vectors, Common Vector operations Using all and any Vectorised operations NA and NULL values Filtering Vectorised if-then else Vector Equality Vector Element names, data frames - Creating Data Frames Matrix-like operations in frames Merging Data Frames Applying functions to Data frames Factors and Tables factors and levels Common functions used with factors Working with tables - Other factors and table related functions - Control statements Arithmetic and Boolean operators and values, Recursion Replacement functions Tools for composing function code Math and Simulations in R. **(8 Hours)**

Unit-II

Matrices, Arrays and Lists: Creating matrices - Matrix operations, Applying Functions to Matrix Rows and Columns Adding and deleting rows and columns, Vector/Matrix Distinction, Avoiding Dimension Reduction, Higher Dimensional arrays, lists, creating lists, General list operations, accessing list components and values, applying functions to lists, recursive lists.

(6 Hours)

Unit-III

Statistics : Descriptive Statistics (summary Measures) using R, Graphs and charts, Binomial distribution Poisson distribution, Normal distribution, Hypothesis Testing, Analysis of Variance (One way ANOVA, Two way ANOVA), Correlation, Simple and Multiple Linear Regression Analysis Logistic Regression, Time Series Analysis, Factor Analysis, Cluster Analysis.

(7 Hours)

Unit-IV

Advanced R Programming : Interfacing R to Other Languages, Text mining, Neural Networks, Monte Carlo methods, classification, Market Basket Analysis.

(7 Hours)

Suggested Readings: (Latest Editions)

1. Motwani, Bharti. Data Analytics with R, Wiley Publications.
2. Chellappen, Subhashini and Acharya, Seema. Big Data and Analytics, Wiley Publications.
3. Ruiz, Diego Modejar.An Introduction to Data Analysis in R: Hands – on coding, Data Mining, Visualization and Statistics from Scratch. Springer Publications
4. Heumann, Christian, Schomaker, Michael Shalabh. Introduction to Statistics and Data Analysis, Springer Publication.
5. Wickham, H., &Grolemund, G. R for data science: import, tidy, transform, visualize, and model data. " O'Reilly Media, Inc.".
6. Maindonald, J., & Braun, J. Data analysis and graphics using R: an example-based approach. Cambridge University Press.

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

Data Preparation and Exploration

Course Code: MBA (A) - 115 L - 2, Credits – 2

Objective: This course will help students to learn importing, preparing the data before processing. Additionally, it will familiarize with the tools used for data exploration and hypothesis testing.

Course Outcomes:
CO1: Explain a typical process for data collection, basic principles behind working with all types of data.
CO2: Set informed and realistic utilization of meta data.
CO3: Understand the basic principles of exploratory analysis, modern extensions to data exploration, including working with "problem data".
CO4: Be able to explore the advantages and disadvantages of various approaches to exploratory analysis.

Course Content

Unit I

Data Preparation: Data import: Open Sources of data, paid data sources, uses and characteristics of open and paid data sources, knowledge development, types of data, enterprise data, consumer data, reading and importing data from different formats, Metadata – meaning and purpose, Organizing and mapping metadata as per analysis requirement. **(6 Hours)**

Unit II

Data Pre-processing : Processed and unprocessed data, difference, anomalies in the unprocessed data, impact of unprocessed data on analytical operations, tools for pre-processing data, properties of processing tools, techniques and functions for cleaning unprocessed data, transforming incorrect data, approaches to normalize datasets, feature scaling. **(7 Hours)**

Unit III

Data Exploration: meaning, importance, limitations in exploring, tools for data exploration, properties of exploration tools, selection of right tolls for data exploration for different types of data, guidelines for data exploration, dimension reduction approaches: Principal Component Analysis, Linear Discriminant Analysis and Non-negative Matrix Factorization **(8 Hours)**

Unit IV

Data Illustration: Analyzing data relationship using scatter diagrams and other graphical techniques, using clustering to evaluate correlations between different data points, principles of hypothesis testing, drawing inferences from the results of data analysis. **(7 Hours)**

Suggested Readings (latest Editions)

1. Pyle, D. Data Preparation for Data Mining, Morgan Koufmann Publishers.
2. Hoyt, R. &Muenchen, R. Data Preparation and Exploration, Informatics Education.
3. Pimpler, E. Data Visualization and Exploration with R: A Practical Guide to Using R, RStudio and Tidyverse for Data Visualization Exploration and Data Science Applications. Geospatial Training Services.
4. Kumar, S. M. & Ahmed, U. Hands-On Exploratory Data Analysis with Python: Perform EDA techniques to understand, summarize, and investigate your data.
5. Elliott, M. Exploring data: an introduction to data analysis for social scientists. Polity.
6. Theobald, O. Data Analytics for Absolute Beginners. Cengage Learning.

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

Information Technology for Management –Lab

Course Code: MBA (A) - 151 P- 2, Credits – 1

Lab will be based on Paper MBA (A) -107 and will basically cover the following: Operating System Utilities, SQL Queries, Basic HTML Tags to create web pages. In addition the students are required to work on Spreadsheet exercises for basic operations and using data analysis tools such as What-If, Goal Seek, Problem Solver, Pivot Tables, etc.

Students are required to maintain a record of all the exercises done by them in a Lab file duly signed by the faculty.

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

Introduction to Analytics and R -Lab

Course Code: MBA (A) - 153 P - 2, Credits – 1

Lab will be based on Paper MBA (A) -113 and will basically cover the following: R Data Structures, Correlation and Regression, Neural Networks, Market Basket Analysis and other models in R Programming language.

Students are required to maintain a record of all the exercises done by them in a Lab file duly signed by the faculty.

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

Data Preparation and Exploration - Lab

Course Code: MBA (A) - 155 P - 2, Credits – 1

Lab will be based on Paper MBA (A) -115 and will basically cover the following: Normalization tools, Principal Component Analysis, Linear Discriminant Analysis, Data illustration and other Data Preparation Techniques.

Students are required to maintain a record of all the exercises done by them in a Lab file duly signed by the faculty.

SEMESTER-II

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

Corporate Finance

Course Code: MBA (A) - 102L - 3, Credits – 3

Objective: The course is aimed to provide an understanding of the essential elements of financial management and the financial environment in which the business firm operates. The paper will examine the objective of shareholder wealth maximization which encompasses much of modern corporate finance and its implication for decision making in the present context.

Course Outcomes:

CO1: Demonstrate the sound understanding of the concept, functions and importance of financial management for a business firm.
CO2: Analyse the convolutions associated with management of short-term and long-term funds in the corporate capital structure.
CO3: Demonstrate the ability to assess and manage financial risks and recommend an optimum capital portfolio for a firm.
CO4: Combine the knowledge of financial management and investment, financing, dividend policy and working capital decisions for ensuring optimum valuation of a firm.

Course Content

Unit I

Introduction: Financial Management Nature, scope and objectives; Time Valueof Money, Computation of EMI, Annuity, Annuity Due, Concept of Risk and Return(including CAPM) Valuation of bonds and equities. **(10 Hours)**

Unit II

Capital Structure: Net Income Approach, Net Operating Income Approach, Traditional Approach and MM Approach, Cost of Capital: Leverage Analysis, Operating Leverage, Financial Leverage, Combined Leveraged. EBIT- EPS Analysis, Capital Gearing. **(10 Hours)**

Unit III

Capital Budgeting: Conventional and DCF Methods, Cash flows for investment analysis, Risk Analysis-Certainty Equivalent Factor, Risk Adjusted Discounting Rate, Decision Tree, Independent and Dependent Risk Analysis, Replacement Decisions, Sensitivity Analysis, Scenario analysis using spread sheet. **(10 Hours)**

Unit IV

Dividend Policy: Walter Model, Gordon Model, MM Approach, Lintner Model; Working Capital Management: approaches, estimation; Management of Inventories; Management of Cash (Various Theoretical Models); Management of Receivables and Marketing Securities.

(12 Hours)

Note: MS-Excel Functions and Formulas to be used.

Suggested Readings: (Latest Editions)

1. Brigham, E. F., & Houston, J. F. Fundamentals of Financial Management. Cengage Learning India Pvt Ltd.
2. Khan, M.Y., & Jain, P.K. Financial Management: Text & Problems. Tata McGraw Hill.
3. Prasanna, C. Financial Management: Theory and Practice. Tata McGraw Hill.
4. Van Horne, James, C. Principles of Financial Management, Pearson.
5. Pandey, I.M. Financial Management, Pearson Education.
6. Ravi Kishore. Financial Management, Taxmann's Publications.

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

Business Research

Course Code: MBA (A) - 104L - 3, Credits – 3

Objective: To acquaint the student with the concepts of research, research design, research process concepts, tools and techniques of data analysis and the process of effective report writing to conduct research and analysis for effective decision making.

Course Outcomes:

CO1: Identify and differentiate between different types of research and research designs.
CO2: Formulate and articulate research questions and specify research objectives and hypothesis.
CO3: Critically analyze and evaluate the existing literature to identity the research gaps and prepare a research proposal for scientific study.
CO4: Design a sample study employing statistical tools and techniques, develop data collection instruments comprising scale items and test their validity and reliability.
CO5: Analyze quantitative data by identifying and applying various statistical tests and interpret the results for drawing generalizations.
CO6: Write a report and present the findings in a structured manner with coherent arguments in logically persuasive style and analyze the implications for both practice and future research.

Course Contents

Unit I

Introduction: Meaning, Purpose and Nature of research; Research; Problem: Formulation; Research Objectives and Research Questions; Research Process; Hypothesis: Formulation. Constructs; Variables; Review of Literature: Purpose, Types and Techniques. **(12 Hours)**

Unit II

Research Design: Meaning, importance and types of research designs; Sampling: Defining target population, sampling frame, sampling units; Sampling Methods; Determining sample size; Considerations in sample design. Sampling &Non-Sampling Errors. **(8 Hours)**

Unit III

Questionnaire: Meaning, purpose, structured vs. unstructured questionnaires, designing questionnaire. Measurement scale: meaning, types, steps in scale formulation, reliability and validity of a measurement scale. . **(10 Hours)**

Unit IV

Data Analysis: Descriptive Statistics, Hypothesis Testing, Parametric and Non-Parametric Tests: Analysis of Variance, Multiple and Logistic regression, Exploratory and Confirmatory Factor Analysis; Discriminant Analysis; Report Writing: Research Report Components, Process of Report Writing. **(12 Hours)**

Note: Software Tools to be used for enhanced learning.

Suggested Readings: (Latest Editions)

1. Cooper, D. R. and Schindler P. S. Business Research Methods. Tata McGraw Hill Education Pvt. Ltd.
2. Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E. Multivariate Data Analysis. Pearson Education.
3. Montgomery, D.C. Design and Analysis of Experiments (International Student Edition). John Wiley & Sons.
4. Cochran, W.G. Sampling Techniques. John Wiley & Sons.
5. Johnson, R.A., & Wichern, D.W. Applied Multivariate Statistical Analysis New Delhi, Prentice Hall of India.
6. Zikmund, W.G. et al. Business Research Methods. New Delhi: Cengage Learning

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

Data Visualization

Course Code: MBA (A) - 106 L - 2, Credits – 2

Objective: The students will be able to learn different visualisation tools and will be able to apply them on real life data.

Course Outcomes:
CO1: Understand the importance of data visualization and the design and use of many visual components.
CO2: Learn to wisely use various visualization structures such as tables, spatial data, time-varying data, tree and network, etc.
CO3: Learn the basics of colours, views, and other popular and important visualization-based issues.
CO4: Learn basic algorithms in data visualization.

Course Content

Unit I
Introduction: meaning, importance, results analysis, categorization of different business outcomes, contribution of result analysis to meeting business outcomes (**6 Hours)**

Unit II
Data Analysis: Identification of target audience for reporting the results of a data analysis, Identifying the right delivery mode and format to report the results of a data analysis. **(7 Hours)**

Unit III
Data Summarization: Comprehending and identifying the need for change in content of a report as per target audience requirement, Summarizing the results into a clear narrative.
(7 Hours)

Unit IV
Visualization: Identify the different visualizations that can be used to support the reporting of analysis results, distinguish between the pros and cons of using a specific visualization to represent certain types of data, Select the right tool to create the visualizations, Comprehend the importance of version control and uploading the report in a knowledge base. **(8 Hours)**

Suggested Readings: (Latest Editions)

1. Nussbaumer, Knaflic, Cole. Storytelling with Data: A Data Visualization, Wiley Publication
2. Healy, Kieran. Data Visualization – A Practical Introduction, Princeton University Press
3. Jones, Ben. Communicating Data with Tableau: Designing, Developing and Delivering Data, O'Reilly Publications.

4. Wilke, Claus O. Fundamentals of Data Visualization: A Primer on Making Informative and Compelling Figures, O'Reilly Publications.
5. Kirk, A. Data visualisation: A handbook for data driven design. Sage Publication.
6. Sosulski, K. Data visualization made simple: insights into becoming visual. Routledge.

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

ECONOMETRICS

Course Code: MBA (A) - 108L - 3, Credits – 3

Objective:This course takes an intuitive approach to apply the techniques of econometrics for problem solving. The course aims at providing a hands-on practical approach for econometric tests, methods of estimation, and interpretation of the results to solve the business problems.

Course Outcomes:
CO1: Understand the nature and behaviour of time series data
CO2: Apply econometrics techniques on the real-life economic data.
CO3: Derive a relationship between two or more series for useful implications, and forecast the series based on various types of regression equations.
CO4: Validate financial economics theories and methods with the help of empirical data.

Course Content

Unit I

Econometrics: Meaning, Nature, scope and methodology of Econometrics, Types of Data, Returns in econometric modelling, process of formulation of econometric model. Simple Linear Regression Model: Assumptions, Procedures and properties of OLS estimator, Co-efficient of determination, Tests of significance, Maximum Likelihood Method; Multiple Linear Regression Analysis: Method of least squares, Properties of OLS estimator, Test of significance of regression coefficient, R^2 and adjusted R^2.

(12 hours)

Unit II

Issues with Classical Regression Model: Multicollinearity, Autocorrelation and Heteroscedasticity; Functional forms; Dummy variables-Nature and uses. Stationary Time Series Models: Stochastic process, Stationary, Modeling AR, MA, ARMA processes, Deterministic and stochastic trends, unit roots, testing unit roots – Dickey & Fuller, Phillips and Perron tests.

(10 hours)

Unit III

Modelling Volatility: Conditional Heteroscedastic Models: ARCH Models, GARCH Models, Estimation of GARCH Models, Forecasting with GARCH Model, Asymmetric GARCH Models, The GARCH-in-Mean Model, Volatility and Correlation: The VECH Model, The Diagonal VECH Model, The BEKK Model, The Constant Correlation Model, the Dynamic Correlation Model. Vector Autoregressive Models: Issues in VAR, Hypothesis Testing in VAR

(10 hours)

Unit IV

Advanced Topics in Regression Analysis Selected Topics: Dynamic Econometric Models: distributed lag models; autoregressive models; instrumental variable estimation; simultaneous equation models. Panel Data Models Methods of estimation; fixed effects model; random effects

model.

(10 hours)

Suggested Readings: (Latest Editions)

1. Dougherty, C. Introduction to Econometrics. Oxford University.
2. Gujrati, D. N. Basic Econometrics. Mc GrawHill Education.
3. Studenmund. Using Econometrics; A Practical Guide. Pearson Education.
4. Wooldridge, J. Introductory Econometrics - A Modern Approach. Cengage Learning Pvt. Ltd.
5. Hatekar, N.R. Principles of Econometrics, Sage.
6. Kacapyr, E. A Guide to Basic Econometric Techniques, Routledge.

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

Business Performance Modelling

Course Code: MBA (A) - 110L - 3, Credits – 3

Objective: TheStudents will be able tocategorize the different performance metrics based on different business outcomes, compute the performance of the model, describe different hyperparameters that can maximize model performance, apply different techniques to identify hyperparameters, use different optimization algorithms and apply the concepts behind hyperparameter tuning, batch normalization.

Course Outcomes:
CO1: To understand Performance metrics for algorithms on different business outcomes
CO2: To model performance computation as per specified business outcome and mapping it.
CO3: Understand Different Optimization algorithms and analysis.
CO4: Working on BPM use cases.

Course Content

Unit-I

Introduction: Performance metrics for algorithms on different business outcomes, categorization of performance metrices. **(10 Hours)**

Unit-II

Model performance: Computation as per specified business outcome; Hyperparameters description for maximizing model performance; techniques for identifying hyperparameters – grid search, random search, Bayesian optimization **(11 Hours)**

Unit-III

Optimization algorithms: meaning, features, purpose, types - minibatch gradient descent, RMSprop, Adam **(11 Hours)**

Unit-IV

Hyperparameter tuning: meaning, concepts behind hyperparameter tuning and their application, batch normalization. **(10 Hours)**

Suggested Readings: (Latest Editions)

1. Loguna, Manuel, Marklund, Johan, Business Process Modeling, Simulation and Design, Pearson Publication.
2. Havey, Michael, Essentials Business Process Modeling, O'Reilly Media Inc.
3. Southekal, H. Prashanth, Data for Business Performance: Model to Transform Business Data into an Enterprise, Technics Publications.

4. Agrawal, T. Hyperparameter Optimization in Machine Learning: Make Your Machine Learning and Deep Learning Models More Efficient. New York, NY, USA: Apress.
5. Hutter, F., Kotthoff, L., &Vanschoren, J. Automated machine learning: methods, systems, challenges (p. 219). Springer Nature.
6. Zheng, A. Evaluating machine learning models: a beginner's guide to key concepts and pitfalls. O'Reilly Media.

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

Risk Assessment and Mitigation

Course Code: MBA (A) - 112L - 3, Credits – 3

Objective: The students will be able to learn the techniques for risk assessment and mitigation for the different models.

Course Outcomes:
CO1: Demonstrate knowledge of the range of business and data related risks faced by organisations.
CO2: Understand the algorithm approach to risk management through risk identification, risk measurement and risk management (or mitigation)
CO3: Understand modelling risk mitigation measures.
CO4: Understand operational risk and how to counter measures to manage it.

Course Content

Unit I

Introduction: Describe the various factors that contribute to algorithmic risk such as flawed data or assumptions, coding errors, insufficient sample sizes, Comprehend the impact that risk factors might have on the outcome of the algorithmic model (**10 Hours)**

Unit II
Risk Estimation: Compute deviation from expected outcomes of model by testing it with multiple inputs; Apply different techniques to estimate the risks involved when the model deviates from expected outcomes
(10 Hours)

Unit III
Mitigation: Categorize the various mitigation measures that can be introduced to counter each type of model risk, select suitable checks and mitigation measures to counter the risk.
(11 Hours)

Unit IV
Measures of Mitigation: Translate mitigation measures into a structured corrective action that can be communicated to the rest of the organization . **(11 Hours)**

Suggested Readings: (Latest Editions)

1. Trendowicz, Adam, Software Cost Estimation, Benchmarking, and Risk Assessment: The software Decision-Makers' Guide to Predictable Software Development, Springer.

2. Fundamentals of Risk Management: Understanding, Evaluating and Implementing Effective Risk Management by Paul Hopkin, kobo publication.
3. Business Risk and Simulation Modelling in Practice, By MICHAEL REES, ISBN: 978-1-118-90404-6 , Wiley publication.
4. Risk Analysis Foundations, Models, and Methods, by Louis Anthony Cox Jr. (Author),Publisher : Springer,ISBN-10 : 9780792376156
5. Kramer, Anne, Model Based Testing Essentials: Guide to the ISTQB Certified Model Based Tester Foundation Level, John Wiley & Sons.
6. Karasan, A. Machine Learning for Financial Risk Management with Python: Algorithms for Modeling Risk. O'Reilly.

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

Data Modelling with Python

Course Code: MBA (A) -114 L - 2, Credits – 2

Objective: The students will be able to learn about the information needs of Management and shall also get 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 toNumpy

(7 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

(7 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 **(7 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. **(7 Hours)**

Suggested Readings: (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. VanderPlas, J. Python data science handbook: Essential tools for working with data. " O'Reilly Media, Inc.".
6. Thareja, R. Python Programming: Using Problem Solving Approach. Oxford University Press

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

MOOCs Course/Open Elective

Course Code: MBA (A) - 116L - 3, Credits – 3

To remove rigid boundaries and facilitate new possibilities for learners in education system, study webs of active learning for young aspiring minds is India's Nation Massive Open Online Course (MOOC) platform. Massive Open Online Courses (MOOCs) are onlinecourses which are designed to achieve the three cardinal principles of India's education policy: Access, Equity and Quality. MOOCs provide an affordable and flexible way to learn new skills, career development, changing careers, supplemental learning, lifelong learning, corporate eLearning & and deliver quality educational experiences at scale and more.

A student is required to earn 3 credits by completing quality –assured MOOC programme offered on the SWAYAM portal or any other online educational platform approved by the UGC / regulatory body from time to time at PG level. Successful Completion Certificate should be submitted to respective institute for earning the course credit.

Alternatively, student can pursue any course offered in the campus by any USS/College at PG level with due intimation to the Program Coordinator/Dean /Director of the School/College.

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

Minor Project

Course Code: MBA (A) -118 Credits – 4

The Project must focus on the application of management concepts, management theory or techniques studied in the first and second semester to understand and address an organizational or social issue or challenge. The project may be based on secondary or primary sources of data. On completion of the project students are required to submit a project report.

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

Data Visualization - Lab

Course Code: MBA (A) -152 P - 2, Credits – 1

Lab will be based on Paper MBA (A) -116 and will basically cover the Data Visualization and illustration techniques using Tableau.

Students are required to maintain a record of all the exercises done by them in a Lab file duly signed by the faculty.

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

Data Modelling with Python - Lab

Course Code: MBA (A) -154 P - 2, Credits – 1

Lab will be based on Paper MBA (A) -124 and will basically cover the following: Introduction to J. Notebook, illustrations, charts using matplotlib in Python, text mining and various machine learning models.

Students are required to maintain a record of all the exercises done by them in a Lab file duly signed by the faculty.

COs and POs Mapping - MBA (Analytics) Programme														
Semester & Course Title	**Subject Code**	**Course Outcomes**	**Program outcomes**											
SEMESTER I			**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PSO1**	**PSO2**	**PSO3**
Management Process and Organisational Behaviour	MBA(A) 101	CO1	3	2	2	2	1	2	3	3	2	3	2	2
		CO2	2	2	2	2	2	1	1	3	2	3	3	2
		CO3	3	3	3	3	2	2	1	2	2	2	2	3
		CO4	2	2	2	3	3	2	1	3	2	2	2	2
Accounting for Management	MBA(A) 103	CO1	3	1	2	2	1	1	1	1	2	2	3	3
		CO2	3	2	3	2	2	2	3	2	3	2	2	3
		CO3	3	3	2	2	2	2	1	2	1	2	3	3
		CO4	3	2	3	3	3	1	2	2	2	3	2	2
Economics and Quantitative Analysis	MBA (A) - 105	CO1	3	1	2	3	3	2	1	1	3	3	2	3
		CO2	3	1	2	2	3	2	2	2	3	2	3	3
		CO3	3	2	2	3	3	2	1	2	2	3	2	3
		CO4	3	2	2	3	3	2	2	1	3	2	2	3
		CO5	3	2	2	3	3	2	1	1	3	3	2	3
Information Technology for Management	MBA (A) - 107	CO1	2	1	1	1	1	1	1	2	1	3	2	2
		CO2	1	1		2	2	3	1	1	2	2	3	2
		CO3	1	1	1	2	2	1	1	2	1	2	2	2
		CO4	2	1	1	2	1	1	2	1	1	2	2	3
		CO5	2	2	3	2	1	2	1	1	2	2	2	2
		CO6	1	2	2	1	1	1	1	1	1	3	3	3
		CO7	3	2	2	1	1	1	2	1	1	2	2	2
		CO8	1	1	1	2	1	1	1	1	1	2	1	1
Communication in Organizations	MBA (A) - 109	CO1	2	3	3	2	2	1	1	3	2	3	2	2
		CO2	2	2	3	3	3	2	1	3	2	2	2	2

		CO3	2	3	2	2	3	3	2	2	1	3	3	2
		CO4	2	3	3	2	2	2	1	3	2	3	2	2
		CO5	2	3	3	3	3	2	1	3	2	2	1	3
Marketing Management	MBA (A) - 111	CO1	3	3	3	3	3	2	2	3	2	2	2	2
		CO2	3	3	3	3	3	2	2	3	2	2	2	3
		CO3	3	3	2	3	3	3	2	3	2	2	3	2
		CO4	3	3	3	3	3	3	2	3	2	2	2	1
		CO5	2	2	2	2	2	2	3	3	2	2	3	2
Introduction to Analytics and R	**MBA (A) - 113**	CO1	3	2	3	2	3	2	3	2	2	2	3	3
		CO2	2	2	3	2	2	2	3	2	1	2	2	3
		CO3	2	2	2	3	2	2	2	3	2	1	2	3
		CO4	2	3	3	2	2	3	3	2	1	2	2	3
Data Preparation and Exploration	**MBA (A) - 115**	CO1	3	3	1	3	3	3	1	1	2	2	3	3
		CO2	2	3	1	3	2	2	2	3	3	2	2	3
		CO3	2	3	3	2	1	3	2	3	2	3	2	3
		CO4	3	2	3	1	3	2	2	3	1	2	3	3

SEMESTER II			**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PSO1**	**PSO2**	**PSO3**
Corporate Finance	**MBA (A) - 112**	CO1	3	3	2	2	2	1	2	1	2	3	3	2
		CO2	3	3	3	3	1	2	1	1	1	3	3	3
		CO3	3	3	3	3	2	1	2	2		2	2	2
		CO4	3	3	3	3	3		1	2	1	3	2	2
Business Research	**MBA (A) - 114**	CO1	3	3	3	3	2	1	2	1	2	2	2	1
		CO2	3	3	3	2	2	1	2	1	2	3	1	3
		CO3	3	3	3	3	2	1	2	3	3	2	2	1
		CO4	3	3	3	3	3	2	2	2	2	2	1	3
		CO5	2	3	2	3	3	3	3	3	2	3	2	3
		CO6	2	3	2	3	3	2	2	3	3	2	3	3
Data Visualization	**MBA (A) - 116**	CO1	3	2	1	2	3	2	1	2	2		3	3
		CO2	2	3	1	3	2	3	1	3	2	2	3	3

		CO3	3	2	3	2	3	2	3	2	3	2	2	2
		CO4	2	3	1	3	2	3	1	3	1	3	2	3
ECONOMETRICS	**MBA (A) - 118**	CO1	2	2	3	2	2	3	3	3	2	2	2	3
		CO2	3	3	3	3	3	3	3	2	2	2	3	3
		CO3	3	3	3	3	3	3	3	2	3	1	2	2
		CO4	3	3	3	3	3	2	2		3	2	2	3
Business Performance Modelling	**MBA (A) - 120**	CO1	3	3	1	3	3	3	1	3	3	3	2	3
		CO2	2	2	2	3	2	2	2	3	2	3	3	2
		CO3	3	2	3	2	3	2	3	2	1	2	2	3
		CO4	3	2	3	3	3	2	3	3	2	2	2	2
Risk Assessment and Mitigation	**MBA (A) - 122**	CO1	2	3	2	3	2	3	2	3	1	2	2	3
		CO2	2	2	1	3	2	2	1	3	2	2	2	2
		CO3	3	2	2	3	3	2	2	3	1	1	3	2
		CO4	3	2	1	3	3	2	1	3	2	2	3	3
Data Modelling with Python	**MBA (A) - 124**	CO1	2	2	2	1	1	2	2	1	2	3	3	3
		CO2	2	2	2	2	1	2	1	1	1	2	2	3
		CO3	2	2	2	1	1	3	1	2	2	3	2	3
		CO4	1	1	2	1	1	3	1	1	2	3	2	3

THIRD SEMESTER

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

STRATEGIC MANAGEMENT

Course Code: MBA (A) - 201 **L - 3, Credits – 3**

Objective: The course is aimed at providing exposure and making the students aware about the role of strategic management in business enterprises and government enterprises.

Course Outcomes:
CO1: Understand the integrative model of strategic management process along with role of corporate governance in management.
CO2: Demonstrate knowledge in formulating strategies along with identifying the resource endowments specific to the firm & industry.
CO3: Implement a strategic plan that considers the functional areas of business along with procedures in order to achieve organizational goals.
CO4:Evaluate challenges faced by managers in implementing and evaluating strategies based on the nature of business, industry, and cultural differences.

Course content

Unit I

Introduction to Strategic Management: Definition of Strategic Management, Nature of Strategic Management, Dimensions of Strategic Management, Need for Strategic Management, Strategic Management – Process, Vision, Mission and Business Definition
Models of Strategic Management: Mintzberg, Ansoff, Porter, Prahalad and Gary Hammel, McKinsey's 7'S Framework: A Tool to Evaluate and Control an Organisation. **(10 Hours)**

Unit II

Strategic Management in Global Environment: Need for Globalization, Different Types of International Companies, Development of a Global Corporation, Complexity of Global Environment, International Culture, Implementing Global Strategies
Competitive Analysis: Competitor Analysis Framework, Rivalry Analysis, Competitive Dynamics, Competitive Rivalry

Industry Analysis: Formulation of Strategy, Five Competitive Forces that Shape Strategy, PESTLE Analysis, Competition and Value, Technology Lifecycle, Industry Analysis in Practice

Strategic Management Process: Purposes of Strategic Management Process, Steps involved in the Strategic Management Process, Strategic Management Process, Strategy Formulation, Constraints and Strategic Choice, Strategy Implementation, Strategic Control and Assessment
(10 Hours)

Unit III

Formulating Corporate-Level Strategy: Balanced Score Card: A Balanced Approach, Grand Strategies: Strategic Alternatives, Growth/Expansion Strategy, Diversification Strategy, Stability Strategy, Retrenchment Strategy, Turnaround Strategies, Combination Strategies

Formulating Business Level Strategy: Porter's Competitive Strategies, Competitive Advantage, Competitive Advantage Factors, How to Build or Acquire Competitive Advantage? Acquiring Core Competence, Low-Cost Strategies, Differentiation Strategies, Focus Strategies. **(10 Hours)**

Unit IV

Analysing Resources and Capabilities: Factors affecting the Internal Environment, Resources and Capabilities as Sources of Profit, Resources of the Firm, Organizational Capabilities, Appraising Resources and Capabilities, Putting Resource and Capability Analysis to Work, Developing Resources and Capabilities

Formulating Functional Level Strategy: Putting Strategy into Action, Structural Design, Information and Control System, Human Resources

Corporate Goals and Strategic Gap: Corporate Goals, Strategic Gap, Porter's Generic Strategies

Managing Internal Organization for Strategy Implementation: Issues in Strategy Implementation, Strategy–Structure Relationship, Divisionalisation: Product and Geographic Forms, Diversification, Strategic Business Units (SBUs), Project Organisation, Matrix Organisation Structure, New Design Options, Factors Influencing Organisation Structure, Structure and Strategy Implementation. **(12 Hours)**

Suggested Readings (Latest Edition)

1. Strategic Management Concepts: A Competitive Advantage Approach, Fred R. David, Pearson Education
2. Strategic Management: An Integrated approach, Hill W.L. Charles & Jones R. Gareth
3. Business Policy and Strategic Management, Azhar Kazmi, Tata McGraw Hill
4. Strategic Management -The Indian Context, R.Srinivasan, Prentice Hall of India
5. Business Strategy : Managing Uncertainty, Opportunity, and Entreprise, J.C.Splender, Oxford University Press

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

ENTREPRENEURSHIP DEVELOPMENT&START UPs

Course Code: MBA (A) - 203 **L - 3, Credits – 3**

Objective: The course aims at inculcating entrepreneurial skills in the students by giving an overview of who entrepreneurs are and what competencies are needed to become an entrepreneur. The course aims to inspire students to establish and manage their own firms.

Course Outcomes:
CO1: Demonstrate an understanding of and appreciation for the characteristics of successful entrepreneurs and their role in the economic development of a nation
CO2: Analyse the industry and competitors of any firm and creatively write an effective business plan
CO3: Understand essential knowledge of how to start one's own business by assessing business viability on various parameters including support from the government
CO4: Identify key drivers of growth in a venture and determine how to strategize and run a start-up in the long run

Course Content

Unit I

Introduction to Entrepreneurship: Evolution, Types of Entrepreneurs; Entrepreneurial Competencies; Factors Affecting Entrepreneurial Growth – Economic, Non-Economic Factors; Entrepreneurship and Economic Development; Women Entrepreneurship, Rural Entrepreneurship, EDP Programmes (**10 hours)**

Unit II

Developing successful Business Ideas: Recognizing Opportunities and Generating Ideas, Feasibility Analysis; Developing an Effective Business Model; Industry and Competitor Analysis; Writing a Business Plan (**12 hours)**

Unit III

Moving from an Idea to an Entrepreneurial Firm: Assessing a New Venture's Financial Strength and Viability; Building a New-Venture Team; Getting Financing or Funding; Role of Support Institutions in India (**10hours)**

Unit IV

Managing and Growing an Entrepreneurial Firm: Unique Marketing Issues, preparing for and evaluating the Challenges of Growth; Strategies for Firm Growth, Export Marketing. **(12 hours)**

Suggested Readings: (Latest Editions)

1. Bruce R. Barringer & R. Duane Ireland. Entrepreneurship: Successfully launching new ventures. Pearson
2. Kuratko, D.F. & Hodgetts, R.M. Entrepreneurship: Theory, Process and Practice. Thomson Press
3. Charantimath, P. Entrepreneurship Development: Small Business Enterprises. Pearson
4. Ali J. Ahmed, Punita Bhatt & Iain Acton. Entrepreneurship in Developing and Emerging Economies. Sage
5. Robert D Hisrich& Michael P. Peters. Entrepreneurship. McGraw Hill

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

PREDICTIVE ANALYTICS AND BIG DATA

Course Code: MBA (A) - 205 **L - 2, Credits – 2**

Course Outcomes

CO1: Develop an understanding of preparing data for applying predictive analysis
CO2: Learn predictive data analysis and big data analysis techniques
CO3: Understand how to treat data for errors to analyse management problems correctly and create effective solutions
CO4**:** Be able to apply predictive analysis tools to solve organizational problems using a systematic and analytical decision-making approach

Course Content

Unit I

Data Processing for Predictive Analysis: Data Transformation, Min-Max Normalization, Z-Score Standardization, Transformations to Achieve Normality, and Graphical and Numerical Methods for identifying outliers. **(6 Hours)**

Unit II

Predictive Analytics: Multiple Regression and Model Building**,** Logistic Regression, Neural Networks,Naïve Bayes and Bayesian Networks, Model Evaluation Techniques. **(8 Hours)**

Unit III

Introduction to Big Data & Analytics: What is Big Data?Characteristics and Evolution of Big Data, Traditional Business Intelligence (BI) Versus Big Data, Terminologies Used in Big Data Environments, Analytics Flow for Big Data, Big Data Stack. **(6 hours)**

Unit IV

Big Data Analytics: Working with big data analytics tools: NoSQL, Hadoop, MapReduce, MongoDB and Cassandra, Hands-on practical learning on these tools. **(8 Hours)**

Suggested Readings: (Latest Editions)

1. Evans, J.R. (Latest Edition). Business Analytics. Pearson
2. Larose, D.T. & Wali, O.P. (Latest Edition). Data Mining and Predictive Analytics (An Indian Adaptation), Wiley
3. Prince, J.T. & Bose, A. (Latest Edition). Predictive Analytics for Business Strategy - Reasoning from Data to Actionable Knowledge, McGraw Hill
4. Acharya, S. & Chellappan (Latest Edition). Big Data and Analytics, Wiley, India.
5. Bahga, A. &Madisetti, V. (Latest Edition). Big Data Science and Analytics: A Hands-On Approach

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

ARTIFICIAL INTELLIGENCE & MACHINE LEARNING

Course Code: MBA(A) 207 **L – 2, Credits – 2**

Objective: The course aims at providing the basic concepts, theories, and techniques of artificial intelligence. To introduce basic concepts and applications of machine learning. To learn the application of AI/ML in the different fields of management, finance, engineering, science, medicine etc.

Course Outcomes:
CO1: Understand the basic concepts of machine learning and some typical applications
CO2: Understanding how to build and validate models and improve them iteratively
CO3: Understand the core concepts of artificial intelligence and applications
CO4: Apply knowledge representation with artificial intelligence

Course Content

Unit I

Introduction to Artificial Intelligence: Growth of Artificial Intelligence in Business, Impact of Artificial Intelligence in Transforming Organizations and Identifying its Challenges and Risks in Terms of executing Artificial Intelligence Strategy. **(8 Hours)**

Unit II

Understanding the AI Problem: Computerized reasoning, Characteristics of an AI problem, Problem representation in AI, State space representation, problem reduction, Concept of small talk programming. **(6 hours)**

Unit III

Introduction to Machine Learning: Basic Concepts in Machine Learning, Types of Machine learning, Examples of Machine Learning Applications – Linear Models for Regression.

(6 Hours)

Unit IV

Introduction to Neural Networks: Early Models, Perception Learning, Backpropagation, Initialization, Training & Validation. Future of Artificial Intelligence and Machine Learning.

(8 Hours)

Suggested Readings: (Latest Editions)

1. Patrick Henry Winston, Artificial Intelligence, Addison Wesley Publishing.
2. George F Luger, Artificial Intelligence: Structures and Strategies for Complex Problem Solving, Pearson Education/Addison Wesley Publishing.
3. Christopher Bishop, Pattern Recognition and Machine Learning, Springer.
4. Kevin P. Murphy, Machine Learning: A Probabilistic Perspective, MIT Press.
5. EthemAlpaydin, Introduction to Machine Learning, MIT Press.

GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, NEW DELHI
MASTER OF BUSINESS ADMINISTRATION (ANALYTICS)
DATABASE MANAGEMENT SYSTEMS

Course Code: MBA (A) - 209 **L - 2, Credits – 2**

Objective: Thiscoursewillhelpstudentstounderstandhowdatabasescanbeusedtostoreanorganization'sinformation.

CourseOutcomes:

CO1:TounderstandthedifferentformsofDatabase,itspurpose,advantages,anddisadvantagesandcomparedifferentdatabasemodels.

CO2:ToimplementSQLforcreation,modifyanddisplaydatafromDBMS

CO3: Understand thebasic conceptofERModels,designissuesandkeyconstraints,alsoReductionofE-RSchematoTables.

CO4:ToimpartknowledgeaboutOracle,itsstructureandPL/SQLcommands,cursors,triggers procedureandfunctions.

CO5:

ToimpartknowledgeabouttheStructureofRelationalDatabase,Normalization,FunctionalDependencies,andtheirapplication,andlearndatabasetransaction,concurrencycontrolandmethodstomanagedataintegrity.

Course Content

Unit I

Introduction to DBMS: Purpose,AdvantagesandDisadvantagesofDBMS,SchemasandInstances,DBMS Architecture, Data Independence, Data abstraction, Data models – Hierarchical, Network, Relational,Object-OrientedandObjectRelational. Data dictionary, metadata, RDBMS, Codd's rules. **(06Hours)**

UnitII

ER-Model: Basic concepts, Types of attributes, Design Issues, Mapping Constraints, Keys, E-R Diagram :Design of an ER Database Schema, Reduction of E-R Schema to Tables, DDL and DML of SQL: Background, Basic Structure, Set Operations, Aggregate Functions, Null Values, Nested Sub Queries, Derived Relations, Views, Joined Relations, Domain Constraints, Referential Integrity, String Commands, Numeric Function, Date Function, Translate and Decode Function, Modification of Database, Data manipulation. **(08 Hours)**

UnitIII

Oracle: Basic Architecture, Introduction to PL/SQL (Conditional, Logic, Loops, Exceptional Handling, Triggers, Procedures, Functions, Cursor). **(08Hours)**

UnitIV

Structure of Relational Databases: Relational Algebra, Functional Dependencies, Normal forms NF1, NF2, NF3 and BCNF, Multivalued Dependencies and Fourth Normal Form, Join Dependencies and Fifth Normal Form. Transaction: ACID Properties, Transaction State, Concurrency: Locks, Deadlock Condition, Two- Phase Locking Protocol. **(06 Hours)**

Suggested Readings: (Latest Editions)

1. Silberschatz,A,KorthHandSudarshanS,DatabaseSystemConcepts,McGraw-HillEducation.
2. ElmsariR.andNavatheS.,FundamentalsofDatabaseSystems,6/e,PearsonEducation.
3. Koch,G.&Loney,K.,Oracle,Thecompletereference.McGrawHillEducation.
4. Singh,ShioKumar,DatabaseSystems:Concepts,DesignandApplications,2/e,Pearson Education.
5. Rob.Peter,Databasesystemconcepts,1/e,CengageLearningIndiaPvt.Ltd.

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

DESIGN THINKING AND INNOVATION

Course Code: MBA (A) -211 **L - 3, Credits – 3**

Objective: The students will be able to learn about the thinking and innovation needs and shall also learn about design thinking and innovation-based approach.

Course Outcomes:
CO1: Understand and identify new pain points and make new solutions possible.
CO2: To understand cognitive fixedness and generate ideas
CO3: To understand and organise innovation concepts to identify critical questions for prototyping.
CO4: To analyse key stakeholders and develop a communication plan

Course Content

Unit I

Introduction to Innovation Foundations: Define the explicit pain points and latent needs as basis for innovation, Reframe the innovation context to identify the most, game-changing part of the problem, to analyse the organizational environment for the ideal conditions for insightful thinking

(**10 Hours)**

Unit-II

Introduction to Thinking Process and Idea Generation: Concept of Six Thinking Hats, Develop the design principles that will help in create user-focused ideas, experiment with ideation tools for breaking cognitive fixedness and generating ideas, Explore structured but open-ended approaches to ideation such as alternate worlds, benchmarking, and brainstorming (**12 Hours)**

Unit-III

Process of developing an experimentation mindset with users prospects: Refine innovation ideas using design heuristics, Combine ideas into complex innovation concepts, critique and strengthen concepts using evaluation tools, guide prototyping by creating critical questions related to a concept's desirability, feasibility, and viability (**10 Hours)**

Unit-IV

Introductory Implementation of Communication and Structure: Assess developer and user perspectives for bias that may affect implementation, apply frameworks to strengthen communications about an innovation's value, Reflect on management skills for sustaining a culture of innovation sets. **(12 Hours)**

Suggested Readings: (Latest Editions)

1. Roger Martin, "The Design of Business: Why Design Thinking is the Next Competitive Advantage", Harvard Business Press , 2009.
2. Hasso Plattner, Christoph Meinel and Larry Leifer (eds), "Design Thinking: Understand – Improve– Apply", Springer, 2011
3. Idris Mootee, "Design Thinking for Strategic Innovation: What They Can't Teach You at Business or Design School", John Wiley & Sons 2013.
4. Radjou Navi, Prabhu Jaideep and Ahuja Simone, Jugaad Innovation Think Frugal, Be Flexible, Generate Breakthrough Growth, Wiley, 2012.

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

SUMMER TRAINING REPORT

Course Code: MBA (A) 213Credits – 4

Objective: This course aims to provide hands-on experience of the corporate sector to the students. By undergoing the summer training, the students shall learn the industry best practices, and how to apply the managerial and analytical concepts studied during their program.

Course Outcomes:

CO1: Integrate academic theory with practice.
CO2: Develop self-confidence, sensitivity and appreciation for diversity, clarification of work and personal values, and workplace etiquette.
CO3: To apply knowledge and skills learned in company/industry/organization to real-world problems
CO4: Develop and demonstrate workplace competencies such oral and written communication, critical thinking, organization, problem solving, decision making, leadership, managing interpersonal relationships, etc. necessary for professional success.
CO5: Carry out research projects, analyze data, and write up and present results in meetings (including experience in using specialized tools at each stage of this process).

All the students will submit their Summer Training Project (in duplicate) within a period of one month from the date of completion of their Summer Training to the concerned Institute/School. The supervisor in the organization under whose guidance the summer training is carried out will be required to grade the student's performance in the format prescribed by the university. Each student will be attached to one internal faculty guide, with whom he/ she shall be in continuous touch during the training period. The internal faculty guide will be required to evaluate the report (out of 40 marks) based on the assessment report provided by the organization where the Summer Training has been completed and his/her own assessment of the work done by the student. The evaluation for the remaining 60 marks shall be made by an external examiner appointed by the University who shall evaluate the report based on a presentation and the assessment report received from the organization where the student has undergone Summer Training.

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

ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING LAB

Course Code: MBA(A) 253 **P-2, Credit-1**

CO1: Integrate academic theory with practice.
CO2: to understand the concepts related to artificial intelligence and its application in business decision making.
CO3: To practice and demonstrate supervised and unsupervised machine learning technique for business intelligence.

Course Contents This course will be based on MBA(A) 207Artificial Intelligence and machine learningcourse and is part of it.

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

DATABASE MANAGEMENT SYSTEMS LAB

Course Code: MBA(A)255 **P-2, Credit-1**

CO1: To learn and implement SQL for creation and modification of databases.
CO2: To comprehend the basics of ER schema. Models, design issues and key constraints
CO3: To app knowledge and skills concerning ORACLE architecture learned in company/industry/organization to real-world problems

Course Contents: This course will be based on MBA(A) 209 Database Management Systems Course and is part of it.

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

HR ANALYTICS

Course Code: MBA (A) 215 **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 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)**

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

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

ORGANIZATIONAL ANALYTICS

Course Code: MBA (A) - 217 **L - 3, Credits – 3**

Objective: The course is aimed at providing exposure and making the students aware of the role of analytics in making data-driven decisions and using insights for creating better organizations

Course Outcomes:

CO1: Understand the integrative model of data-driven organizations and the process flow mechanism.
CO2: Demonstrate the knowledge of fixed and dynamic designs of organizations.
CO3: Implement a strategic plan that considers the functional areas of business along with procedures in order to achieve HR goals.
CO4:Evaluate challenges faced by managers in implementing and evaluating challenges for organizational analytics

Course content

Unit I

Introduction to data-driven organizations: Effective organization Design and management, common challenges in organizational design, Foundation and core concepts: Creating hierarchical data structure, connect the system, Visualizing data to analyse. **(10 Hours)**

Unit II

Macro Design: Introduction, Strategy articulation, Design Criteria, Constraints and risk, Structural options, Analysing and Designing structural option, Developing and signoff the business use case.

(12 Hours)

Unit III

Micro Design: Introduction, Data blockers and myths, Building the baseline data, Performing analysis, Statistical traps, Process Maps, Design the to-be process and structure, Linking the to-be work to-be positions and hierarchical structure.

(10 Hours)

Unit IV

Dynamic Process Design: Dynamic process design methodologies, Objectives vs competency management, Rightsizing, Methods of rightsizing, HOWWIP concept, impact assessment, transition management and consultation **(12 Hours)**

Suggested Readings

1. Morrison, Rupert; Data-driven organization design : sustaining the competitive edge through organizational analytics, Koganpage
2. Berger, L.A. (Latest Edition). The Compensation Handbook, Sixth Edition: A State-Of-The-Art Guide to Compensation Strategy and Design. McGraw Hill Europe
3. Martocchio, J.J. (Latest edition). Strategic Compensation: A human recourse perspective approach. Pearson
4. Aguinis, H. (2013). Performance Management. Pearson
5. Seema Sanghi. The Handbook of Competency Mapping. Sage

GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, DELHI
MASTER OF BUSINESS ADMINISTRATION (ANALYTICS)
TALENT MANAGEMENT

Course Code: MBA (A) 219 **L – 3, Credits - 3**

Objective: The course focuses on the attraction, acquisition, and retention of talent in organizations.

Course Outcomes:

CO 1: Understand key concepts of talent management and create a talent management system for organization excellence
CO2: Understand key concepts of competency mapping and design an instrument for competency assessment
CO3: Analyse strategic talent acquisition practices and design & evaluate training methods to foster learning in a global workplace
CO4: Assess employee performance and analyse methods for career and succession planning in a global workplace

Course Content

Unit I

Introduction: Creating a Talent Management System for organization excellence; steps to creating a talent management system; forces impacting talent management. **(8 Hours)**

Unit II

Building block of Talent Management: Competency mapping- Introduction to the concept of competency, developing a competency model; Competency Assessment- principal approaches to assessing competencies; designing an instrument for competency assessment. **(12 Hours)**

Unit III

Managing Talent using competency (1): competency-based recruitment and selection, competency-based training and development. **(10 Hours)**

Unit IV

Managing Talent using competency (2): competency-based performance management; competency-based career and succession planning. **(12 Hours)**

Suggested Readings: (Latest Editions)

1. Anindya Basu Roy & Sumati Ray. Competency based Human Resource Management. Sage Text
2. Lance A. Berger, Dorothy R. Berger. Talent Management Handbook. Association for Talent Development (ATD) By. Virginia, USA.
3. Sasmita Misra. Role of Competency Mapping in Talent Management. Black Eagle Books
4. Sudhir Warier. Competency Management. Notion Press
5. Louis L. Carter and Marshall Goldsmith. Best Practices in Talent Management.

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

SOCIAL MEDIA ANALYTICS

Course Code: MBA (A) 221 **L – 3, Credits: 3**

Objective: The objective of this course is to equip students with the knowledge of social media and web analytics to equip students with skills to collect, analyse and derive actionable insights from web, social media chatter, usability testing and experiments.

Course Outcomes

CO1: To comprehend social media, web and social media analytics and their potential impact.
CO2: To be able to understand usability metrics, web and social media metrics
CO3: To be able to identify Key Performance Indicators for a given goal
CO4: To be able to use ready-made web analytics tools

Course Content

Unit I

Understanding the Basics: Introduction to web and social media-websites, webapps, mobile apps and social media; Usability-User experience, customer experience, customer sentiments, web marketing, conversion rates, ROI, Brand reputation; Web analytics 2.0 framework **(8 Hours)**

Unit II

Measuring user experience: Data understanding-structured, unstructured, metadata, Big data and linked data; Lab Testing and experiment design-Selecting participants, counterbalancing, A/B testing, controlled experiments; Usability metrics, Planning and performing usability study **(8 Hours)**

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Unit III

Web Analytics: PULSE metrics (Page views, uptime, latency, seven day active user) on business and technical issues; HEART metrics (Happiness, engagement, adoption, retention and Task Success) on user behaviour issues; On-site web analytics, Off-site web analytics, the goal signal metric process **(12 Hours)**

Unit IV

Social Media Analytics: What and Why of social media analytics, Social media KPIs, Performing social media analytics-business goals, KPIs, data gathering, measurement and feedback; Dashboards using Social Links tool, Social Reports **(14 Hours)**

Suggested Readings

1. Avinash Kaushik, Web Analytics 2.0: The Art of Online Accountability and Science of Customer Centricity, John Wiley & Sons; Pap/Cdr edition (27 Oct 2009)
2. Tom Tullis, Bill Albert, Measuring the User Experience: Collecting, Analyzing, and Presenting Usability Metrics, Morgan Kaufmann; 1 edition (28 April 2008)
3. Jim Sterne, Social Media Metrics: How to Measure and Optimize Your Marketing Investment, John Wiley & Sons (16 April 2010)
4. Brian Clifton, Advanced Web Metrics with Google Analytics, John Wiley & Sons; 3rd Edition edition (30 Mar 2012)

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

Course Code: MBA (A)-223 **L – 3, Credits – 3**

Objectives: This course is designed to help the students learn the application of retail analytics for optimal solutions in market plans

Course Outcomes:

CO1: Theoretical understanding of retail and retail analytics
CO2: Understanding and analyzing retail market
CO3: Working knowledge of the techniques, elements, and approaches of retail mix.
CO4: Ability to develop and interpret market retailers' entry decisions

Course Content
Unit I
Introduction to retailing: Understanding modern retailing, marketplace and technological aspects, Industry analysis, Constructing development environment using R studio **(11 Hours)**

Unit II
Introduction to price and price analytics: Pricing tactics: rationality and net benefit principles, Demand Curve and maximum WTP, Competitive advantage, Linear models for pricing: understanding elasticities, profit and revenue maximization, Multivariate regressions, log-log models for new product pricing **(10 Hours)**

Unit III
Retailers' Decision: Retailers' entry decision, Non-linear models to understand simultaneous and sequential moves, Designing promotion strategies in geographic markets, designing maps to communicate strategies; Retailers' location decision: Huff model and regression model, Classification tree and random forest for Merchandising strategy, apply machine learning in retailing **(10 Hours)**

Unit IV
Artificial Intelligence in Retailing: Single and multi layer neural networks, Omni channels and AI, Game theoretical view of Most favoured customer clause, Constructing demographics for trade area, Introduction to deep learning in retailing. **(11 Hours)**

Suggested Readings: (Latest Editions)

1. Sachs, Anna-Lena; Retail Analytics:Integrated Forecasting and Inventory Management for Perishable Products in Retailing, Springer link,2015
2. Cox, Emmett; Retail Analytics: A secret weapon, Wiley
3. Bullard, Brittany;Style& Statistics: The Art of Retail Analytics, Wiley and SAS business series.
4. Ruiz, Diego Modejar (2020). An Introduction to Data Analysis in R: Hands – on coding, Data Mining, Visualization and Statistics from Scratch. Springer Publications
5. Heumann, Christian, Schomaker, Michael Shalabh (2020). Introduction to Statistics and Data Analysis, Springer Publication.

GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, DELHI

MASTER OF BUSINESS ADMINISTRATION (ANALYTICS)

CONSUMER BEHAVIOUR

Course Code: MBA (A) 225 **L-3, Credits-3**

Objective: This course aims at enabling students to understand the various aspects of consumer behaviour, the external and internal factors that influence consumer behaviour and to apply this understanding to the development of marketing strategy.

Course Outcomes:

CO1: Demonstrate an understanding of the importance of studying consumer behaviour and its relevance to decisions in marketing, public policy and social and economic spheres.

CO2: Demonstrate an understanding of the consumer decision-making process and the internal and external determinants that influence this process.

CO3: Apply the various research tools and techniques to gain insights into consumer behaviour.

CO4: Demonstrate the ability to develop creative marketing strategies and solutions based on an understanding of the consumer behaviour of the relevant target groups.

Course Content

Unit I

Introduction to Consumer Behavior: Scope and Relevance of Consumer Behaviour Studies; Approaches to studying Consumer Behaviour; Consumer Journey Map: Problem Recognition, Information Search, Alternative Evaluation-Decision Rules- and Purchase, Outlet Selection, Post Purchase Behavior and Customer Satisfaction; Types of Buying Behaviour, Role of Involvement; Models of Consumer Behavior; Understanding Online Consumer Behaviour. **(10 Hours)**

Unit II

Individual Determinants of Consumer Behaviour: Motivation; Attention, Perception and Consumer Imagery; Learning and Memory; Personality and Self Concept; Consumer Attitudes – Formation and Change; Consumer Values and Lifestyles. **(12 Hours)**

Unit III

External Determinants of Consumer Behaviour: Influence of Culture and Subculture; Social Class; Reference Groups, Word of Mouth & Opinion Leadership; Family Influences; Online Social Influences: Social Media &eWom. **(10 Hours)**

Unit IV

Consumer Behaviour -Related and Emerging Issues: Diffusion of Innovation: Researching Consumer Behaviour; Measuring Customer Satisfaction; Consumer Behaviour and Public Policy; Dark Side of Consumer Behaviour, Shaping Consumer Behaviour. **(10 Hours)**

Suggested Readings: (Latest Editions)

1. Schiffman, L.G, Wisenblit, J. & Ramesh Kumar S., Consumer Behaviour, Pearson Education, India.
2. Hawkins, D.I, Mother & Baugh, D.L.& Mookerjee A., Consumer Behaviour- Building Marketing Strategy, Mc Graw Hill Education
3. Solomon, Michael R., Consumer Behaviour: Buying, Having and Being, Pearson Education, India.
4. Sharma D, Sheth J. N. & Mittal B., Consumer Behaviour: A Managerial Perspective, Cengage Learning, New Delhi.
5. Babin, B. J., Harris, E.G. & Mohan, A., Consumer Behavior: A south Asian Perspective, Cengage Learning India Pvt. Ltd, New Delhi.

GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, NEW DELHI

MASTER OF BUSINESS ADMINISTRATION (ANALYTICS)

FINANCIAL RISK ANALYTICS

Course Code: MBA(A)-227 **L – 3, Credits – 3**

Objectives: This course takes an intuitive approach to apply the techniques of econometrics for financial problem-solving. The course aims at providing a hands-on practical approach for econometric tests, methods of estimation, and interpretation of the results to solve the business problems.

Course Outcomes:

CO1: Address the challenges associated with financial risk through quantitative model
CO2: Apply financial econometrics techniques on the real-life financial data.
CO3: To understand various risk management mechanisms
CO4: Validate understanding of risk, return and pricing of asset

Course Content

Unit I

Overview of Financial Risk Analytics: Concept of financial risk, types of financial risk,measurement of various risk, Value at Risk (VaR).Risk and return relationship, Return calculation methods, Exponential Weighting and Expected Shortfall approaches, Role of financial risk manager. (12 Hours)

Unit II

Credit Risk Modelling: Concept of credit risk, types of credit risk, credit risk modelling, credit default risk, counterparty credit risk, concentration risk, Quantifying credit risk: Probability of default, Loss given default; methods to mitigate credit risk: risk-based pricing, netting, collateral, covenants, and diversification. (10 Hours)

Unit III

Portfolio Risk Management: Arbitrage, Dynamic hedging, hedge ratios, creating efficient portfolios, maximizing risk return trade-offs, hedging and risk management techniques. (10 Hours)

Unit IV

Simulation: Estimating VaR for portfolio of financial instruments, Historical simulation, Monte Carlo simulation and Delta-Gamma approximation methods, real life market risk events, Expected loss of portfolio. (10 Hours)

Suggested Readings: (Latest Editions)

1. Dougherty, C. Introduction to Econometrics. Oxford University.
2. Studenmund. Using Econometrics; A Practical Guide. Pearson Education.
3. Wooldridge, J. Introductory Econometrics - A Modern Approach. Cengage Learning Pvt. Ltd.

4. Hatekar, N.R. Principles of Econometrics, Sage.
5. Kacapyr, E. A Guide to Basic Econometric Techniques, Routledge.

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

INVESTMENT ANALYSIS AND PORTFOLIO MANAGEMENT

Course Code: MBA (A) 229 **L – 3,Credits - 3**

Objective: The aim of the course is to acquaint the students with the concepts of investments and portfolio management. It aims to develop a practical orientation toward the principles of investment, pricing and valuation. The course provides a theoretical underpinning of the subject to enable the students to make investment-related decisions based on the trade-off between risk and return.

Course Outcomes:
CO1: Understand the risk and return relationship of financial market instruments and securities available for investment.
CO2: Apply the acquired knowledge of the security market for valuation of both equity and fixed income securities under goal-based investment planning.
CO3: Understand the concept and importance of portfolio management and develop skills for construction, evaluation and revision of portfolio.
CO4: Understand the various behavioural biases that impact investment decision making.

Course Content

Unit I

Introduction to Investment Environment: Concept, Nature and Scope, Features of Investment, Investment Process, Investment Avenues- Concept of Small, Mid, Large Cap, Penny stocks, Investment Environment, Investment Risks- Types- Systematic and Unsystematic Risk, Concept of Beta, Risk-Return tradeoff, Techniques of Risk Measurement- Variance and Standard Deviation, Covariance and Coefficient of Determination, Valuation of Bonds and Valuation of Equity. **(12 Hours)**

Unit II

Fundamental and Technical Analysis: Concept & significance of economic analysis, industry analysis: introduction, need for industry analysis, alternative classification of industry, industry life cycle analysis, economic factors & industry analysis, Company analysis - nature and style of management, key role of financial analysis, ratio analysis. Technical Analysis: line chart, bar chart, points and figures chart, candlestick chart, reversal patterns, continuation patterns, Dow Theory, Elliott wave theory. **(10 Hours)**

Unit III

Portfolio Management- Meaning and Process, Modern Portfolio Theory, Efficient Frontier, Efficient Frontier and Investor's Utility, Indifference Curve of an Investor, Equilibrium of an Investor, Single Index Model, Capital Market Theory, Capital Asset Pricing Model, Multifactor Models of Risk and Return: Arbitrage Pricing Theory, French and Fama Model, Portfolio performance evaluation- Sharpe's and Treynor's portfolio performance evaluation, Portfolio Alpha, Portfolio revision-Active and passive strategies. **(12 Hours)**

Unit IV

Capital Market Efficiency: Efficient Market Hypothesis, Forms of Market Efficiency, Measurement of Efficiency of the Financial Markets, Anomalies and Diversion from Efficiency, Behavioral Biases. **(8 Hours)**

Suggested Readings : (Latest Editions)

1. Bodie, Kane, Marcus and Mohanty; Investments; McGraw-Hill
2. Reilly, F., & Brown, K., Investment Analysis and Portfolio Management. Cengage Learning.
3. Ranganatham, Madhumathi, R., Investment Analysis and Portfolio Management, Pearson Education.
4. Luenberger, David; Investment Science; Oxford University Press
5. Talwar, Shalini; Security Analysis and Investment Management; Cengage India Private Ltd.
6. Fischer, D.E, & Jordon,R.J. Security Analysis and Investment Management, Pearson Education.

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

FINANCIAL MODELLING

Course Code: MBA (A)-231 **L – 3, Credits – 3**

Objectives: This course is designed to help the students learn the application of MS-Excel in the financial modelling.

Course Outcomes:

CO1: Theoretical understanding of financial modelling, valuation, and strategy analysis
CO2: Understanding and analyzing financial statements
CO3: Working knowledge of the techniques, elements and approaches of forecasting
CO4: Ability to develop and interpret financial statements in Excel and use it for solving their business problems

Course Content

Unit I

Excel as a tool in Financial Modelling: Excel concepts - Basic commands; Functions - math's, logical, look up, date, text and financial; Chart, diagram, picture, background, auto format, conditional formatting, style, filter, sort; Formulas and macros; What if analysis, pivot table, pivot chart, scenario, goal seek, problem solver tool, advanced filter. **(11 Hours)**

Unit II

Financial Modelling Basic Concepts: Introduction, Advanced functions of MS-Excel as a tool in financial modelling; Components of a financial model, building the template, filling in the historical data, identifying assumptions and drivers, forecasting various schedules and financial statement, building the supporting schedules, various approaches to valuation, key ratios, financial ratios and company analysis, building cases and sensitivity analysis - looking at the probabilistic analysis of the best and worst case scenario. **(10 Hours)**

Unit III

Cash Ratios and Non-Cash Valuations: Cash Ratio - Structured model with a menu & accounting statement, Calculating key financial ratios, Deriving an international cash flow; Non Cash Flow Valuations - Accounting methods, Dividend discount models, Market-based methods – EPS and multiples, Fundamentals of EV/ EBITDA, EV/Sales, Peer groups. **(10 Hours)**

Unit IV

Forecasting Methods and Initial Valuations: Review of forecasting methods, relationship between company and financial strategy, identifying and forecasting key drivers, linkages and modelling problems, deriving free cash flow; Cost of capital and initial valuation - alternative theories – bonds and arbitrage pricing theory, capital asset pricing model constituents, asset and equity betas, mathematical derivation, methods of adding terminal value, producing an equity valuation, comparison to existing share price.
(11 Hours)

Suggested Readings: (Latest Editions)

1. Day, Alastair; Mastering Financial Modelling in Microsoft Excel: A practitioner's guide to applied corporate finance, Pearson Education.

2. Rees, M., Principles of Financial Modelling: Model Design and Best Practices Using Excel and VBA. Wiley.
3. Rees, M., Financial Modelling in Practice: A Concise Guide for Intermediate and Advanced Level. Wiley.
4. Kapil, S., Financial Valuation and Modelling. Wiley.
5. Fairhurst, D.S., Using Excel for Business and Financial Modelling: A Practical Guide. Wiley.

GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, DELHI
MASTERS IN BUSINESS ADMINISTARTION (ANALYTICS)

MOOC/Open Elective

Course Code: MBA (A)-233 **Credits - 3**

To remove rigid boundaries and facilitate new possibilities for learners in education system, study webs of active learning for young aspiring minds is India's Nation Massive Open Online Course (MOOC) platform. Massive Open Online Courses (MOOCs) are online courses which are designed to achieve the three cardinal principles of India's education policy: Access, Equity and Quality. MOOCs provide an affordable and flexible way to learn new skills, career development, changing careers, supplemental learning, lifelong learning, corporate eLearning & and deliver quality educational experiences at scale and more.

A student is required to earn 3 credits by completing quality –assured MOOC programme offered on the SWAYAM portal or any other online educational platform approved by the UGC / regulatory body from time to time at PG level. Successful Completion Certificate should be submitted to respective institute for earning the course credit.

Alternatively, student can pursue any course offered in the campus by any USS/College at PG level with due intimation to the Program Coordinator/Dean /Director of the School/College.

IV SEMESTER

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

MAJOR PROJECT REPORT

Course Code: MBA(A) 202 **L – 8, Credits – 8**

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.

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 to 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/Institution 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 based on 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 based on a Viva-Voce and the report by an examiner to be appointed by the University.

GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, NEW DELHI
MASTER OF BUSINESS ADMINISTRATION (ANALYTICS)
PROJECT MANAGEMENT

Course Code: MBA(A) 204 **L – 3, Credits – 3**

Objective: The course is multi-dimensional in approach and covers the areas of management of projects 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 the concept of project activity as distinct from routine activities and 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 requirements 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, and Project Control Process. (10 Hours)

Suggested Readings : (Latest Editions)

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

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

ANCIENT MANAGEMENT PHILOSOPHY AND INDIAN ETHOS

Course Code: MBA (A) 206 **L - 2, Credits: 2**

Objective: The course is aimed at building knowledge about Indian Ethos and its relevance in contemporary and modern world. It will help students understand the fundamental tenet of Indian Philosophy.

Course Outcomes:
CO1: Learn the significance of Indian value system and ethical practices
CO2Learn the concepts of management derived from ancient management philosophy.
CO3: To understand the management functions with Indian Perspective.
CO4: Understand the issues concerning Indian wisdom and sustainability

Course Content

Unit I

Indian Ethos and Values: Indian work ethos, Principles of Ancient Indian Management: Basic Learnings from Bhagavad Gita and Chanakya Niti, Values: Its formation and application, business leadership and value attributes

(8 hours)

Unit II

Indian Philosophical Systems: Nature of Mind- Personality attributes based on Gunas, Economics of Giving, Developing, and implementing gross national happiness, Sarva-Dharma-Sambhav, Vasudev Kutumbhkam and globalization, Spirituality, Consciousness and Mindfulness

(10 hours)

Unit III

Learning from Indian Epics: Vedic philosophy, Buddhist Philosophy, Taoism, Jainism, Islam and Business Ethics, Contribution of Indian knowledge to humanity

(6 hours)

Unit IV

Indian Wisdom and Sustainability: Ancient Indian wisdom for ecological conservation, the concept of conscience, contentment, social responsibility, Learnings on sustainable living.

(4 hours)

Suggested Readings: (Latest Editions)

1.Agarwala, P.N., 2001. A comprehensive history of business in India from 3000 BC to 2000 AD. Tata McGraw-Hill Publishing Company.
2.Nandagopal, R., 2010. Indian Ethos & Values in Management. Tata McGraw Hill Education Private Limited.

3.Lawrence, A. T., and Weber, J., Business, and society: Stakeholders, Ethics, Public Policy. McGraw-Hill Education.
4.Robert, A. (2009). Business ethics and ethical business. USA: Oxford University Press.
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

GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, NEW DELHI

MASTER OF BUSINESS ADMINISTRATION (ANALYTICS)

MULTIVARIATE DATA ANALYSIS

Course Code: MBA(A) 208 **L – 3, Credits – 3**

Objective: The course is multi-dimensional in approach and covers the areas of management along with multivariate data analysis. The course aims to impart knowledge of advanced statistical and analytical techniques to generate business outcomes.

Course Outcomes:

CO1: Appreciation of the concept of multivariate data analysis and its usage in business organization

CO2: the capacity to perform hands-on projects to solve real-world business problems

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

CO4: General awareness of model development and validation

Course Content

Unit I

Exploratory Data Analysis: Introduction, Basic multivariate statistics: mean, variance, covariance, correlation; aims of multivariate data analysis: data exploration and inference; Enhanced scatterplots: bubble plots, smoothing, density estimates, bivariate boxplots; probability plots: quantile and normal plots. (10 Hours)

Unit II

Exploratory Multivariate Techniques: Principal Component Analysis: Data Dimension Reduction, linear combination of variables, eigenvalues and vectors, loadings; Correspondence Analysis: Two Dimensional tables, multiple correspondence analysis; Multidimensional scaling; cluster analysis. (12 Hours)

Unit III

Confirmatory Multivariate Techniques: Generalized linear models: Linear models, Non-linear models, link function and error distribution; Regression and MANOVA; Log-linear models; Categorical and binary response, sampling scheme, likelihood function, model selection; Transition Models: longitudinal study, Markov chains. (10 Hours)

Unit IV

Structural Equation Models and path analysis: Introduction, Basic factor analysis, Path Analysis, Path Diagrams, Structural Equation Models, Assessment of fit. (10 Hours)

Suggested Readings

1. J. Holton Wilson and Barry Keating. Business Forecasting, Fourth Edition, (McGraw Hill/Irwin, 2001) ISBN 0-07-252646-7
2. Sharma, J.K. Operations Research, Sixth Edition (Luxmi Publications)
3. Bari, A., Chaouchi, M., Jung, T. Analytics for Dummies, 2 nd Edition, 2016.
4. Siegel, Eric, Predictive Analytics: The Power to Predict Who Will Click, Buy, Lie, or Die, Wiley, 2016.
5. Theobald, Oliver, Data Analytics for Absolute Beginners Cengage Learning, 2 nd Edition, 2019

GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, NEW DELHI
MASTER OF BUSINESS ADMINISTRATION (ANALYTICS)
STRATEGIC HR ANALYTICS

Course Code: MBA (A)-210 **L – 3, Credits – 3**

Objectives: This course is designed to help students learn the application of strategic HR analytics for optimal solutions in managing human resources in organizations

Course Outcomes:

CO1: Theoretical understanding of strategic HR analytics
CO2: Understanding and analysing various strategic HR metrics
CO3: Working knowledge of employee health, wellness, and welfare.
CO4: Ability to develop and measure job performance

Course Content
Unit I
Making HR measurement Strategic: Decision frameworks, Data measurement and analysis, the LAMP Framework, Traditional vs Contemporary HR measures, Analytical Foundations: Levels of sophistication, Fundamental Analytical Concepts **(11 Hours)**

Unit II
Measurement of Costs: Hidden costs of absenteeism, Analytics and measures for employee absenteeism, ways to control absenteeism, applying tools for presenteeism, Costs of employee turnover, Pivotal talent pools, Computing turnover rates, training costs, Costs of lost productivity and lost businesses, performance differences between levers and replacements, Costs of separation, selection costs

(10 Hours)

Unit III
Employee Wellness and welfare: Health, wellness and worksite health promotions, Skyrocketing healthcare costs, Strategies to control healthcare costs, Employee Health vs financial outcomes, Analytics for decision about WHP programs, Measurement dilemmas for WHP programmes, ROI analysis of WHP programmes, Future of Lifestyle modifications and WHPs **(10 Hours)**

Unit IV
Measuring Job Performance: Economic value of job performance, Estimating monetary value of variations in job performance, Estimation methods (SD), Utility Analysis of HRD programs, Break even analysis of HRD programs, Costs Benefit analysis of Training and development.
(11 Hours)

Suggested Readings: (Latest Editions)

1. Cascio & Boudreau, Investing in People: Financial Impact of HR Initiatives, Pearson.
2. Isson and Harriot, People Analytics in the Era of Big Data, Wiley, 2016.
3. Hughes,Essentials of Performance Analysis, Routledge, 2007.
4. Dearborn, Jenny;Data Driven: How Performance Analytics Delivers Extraordinary Sales Results; Wiley
5. Heumann, Christian, Schomaker, Michael Shalabh (2020). Introduction to Statistics and Data Analysis, Springer Publication.

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

Managing Organizational Development

Course Code: MBA (A)212 **L – 3, Credits: 3**

Objective: The objective of this course is to equip students with the knowledge of organizational development interventions to manage change processes 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)**
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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. Cummings, T.G. & Worley, C.G. Theory of Organization Development and Change, Cengage Learning.
4. 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
5. Hodges, J. Organization Development: How Organizations Change and Develop Effectively. Macmillan International

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

COMPENSATION AND PERFORMANCE MANAGEMENT

Course Code: MBA (A) 214 **L – 3, Credits - 3**

Objective: The objective of this course is to equip students with the knowledge of designing effective compensation and performance management systems in the organizations for converting the organization in a high performing work system.

Course Outcomes:

CO1: Understand the various components of pay structure, incentives, benefits to be provided to the employees to keep them motivated and performing.
CO2: Think analytically and creatively design tax efficient pay packages at every level in the organization for employees in national and international scenario.
CO3: Demonstrate an understanding of the performance management process and the ability to select an appropriate measurement approach and plan the performance management process and documentation for an organization.
CO4: Demonstrate the ability to develop creative solutions to the challenges involved in implementing the performance management process and to employ the performance management process for potential appraisal, career development and succession planning.

Course Content

Unit I

Basics of Compensation Management: Compensation Definition and Foundation, Compensation strategies in Public and private sector, Rewards, Incentives, Benefits and Supplementary compensation, Styles of Compensation, Compensation Structure- Indian Practices in Public and Private Sector **(10 Hours)**

Unit II

Compensation Techniques : Knowledge based compensation, Team Compensation, Competency based compensation, Role of wage boards and pay commissions in public sector compensation, Incentive schemes/ Payment-by-results (PBR), Performance linked Compensation, Tax Planning: The implication of employee compensation package on the employer, Tax efficient compensation package, International Compensation: Problems, Objectives, Elements of expatriate's compensation package, Dual compensation and tax issues in case of expatriates. **(11 Hours)**

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Unit III

Foundations of Performance Management: Concept and Philosophy underlying Performance Management, Significance, Objectives, and Characteristics of Effective Performance Management, Models of Performance Management Process

Performance Measurement Planning and Methods: Defining Performance and Selecting a measurement approach, Developing Job Descriptions, Defining Performance standards, KRAs,

and KPIs based on job descriptions, Designing appraisal forms, Methods of Performance Appraisal. **(10 Hours)**

Unit IV

Performance Management Implementation: Implementing Performance Management Process, Performance Monitoring, Performance Management Documentation, Performance Review Discussions, Challenges in performance review process and measures to overcome challenges.

Other Performance and Development Issues: Coaching and Performance Management, Potential Appraisal, Performance Management in MNC, Managing Contextual Performance, Performance based career planning, career development and succession planning, Technology and Performance Management, Performance Management of the future.

(11 Hours)

Suggested Readings : (Latest Editions)

1. Singh, B.D. (2017) Compensation and Reward Management. Excel Books
2. Das, P. (2019). Compensation Management. Notion Press
3. Berger, L.A. (Latest Edition). The Compensation Handbook, Sixth Edition: A State-Of-The-Art Guide to Compensation Strategy and Design. McGraw Hill Europe
4. Martocchio, J.J. (Latest edition). Strategic Compensation: A human recourse perspective approach. Pearson
5. Aguinis, H. (2013). Performance Management. Pearson
6. Bhattacharya, D.K. (Latest Edition). Performance Management Systems and Strategies. Pearson

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

MARKETING ANALYTICS

Course Code: MBA (A)216 **L-3, Credits: 3**

Objective: This course will provide the students, with 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, Multidimensional 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

GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, NEW DELHI

MASTER OF BUSINESS ADMINISTRATION (ANALYTICS)

SUPPLY CHAIN ANALYTICS

Course Code: MBA (A) 218 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.

GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, NEW DELHI

MASTER OF BUSINESS ADMINISTRATION (ANALYTICS)
DIGITAL & SOCIAL MEDIA MARKETING

Course Code: MBA (A) 220 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& 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 & 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, Social Media KPIs; 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.

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

FINANCIAL ANALYTICS

Course Code: MBA (A) 222 **L – 3, Credits: 3**

Objective: The objective of this course is to gain an understanding of how managers use business analytics to formulate financial strategies and solve financial business problems and aid decision making

Course Outcomes

CO1: To comprehend the fundamentals of financial analytics.
CO2: To be able to understand financial metrics
CO3: To be able to identify Key Performance Indicators for a given goal in financial decision making
CO4: To be able to use ready-made financial analytics tools

Course Content

Unit I

Fundamentals of Financial Analytics: Definition, Relevance and Scope of Financial Analytics, Recent Trends in Financial Analytics, Financial Time Series-Asset Returns, Distributional Properties of returns, Properties of financial time series data.

(8 Hours)

Unit II

Asset Portfolio Models: Portfolio construction using analytics, Application of Markowitz Theorem, Capital Asset Pricing Model, and Arbitrage Pricing Theory, Diversification and Portfolio Optimization

(8 Hours)

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Unit III

Modelling Volatility and Risk: Characteristics of volatility, Modelling volatility using ARCH/ GARCH models, Measuring and Modelling risk, Application of Value at Risk, Non-Synchronous Trading

(12 Hours)

Unit IV

Modelling Credit Risk: Corporate Liabilities, Default boundaries, Optional Capital Structure, Intensity Modelling, Rating based term structure models, Credit risk and interest rate swaps, Dependent default modelling

(14 Hours)

Suggested Readings

1. Argimiro Arratia (2014), "Computational Finance An Introductory Course with R", Atlantis Press, ISBN 978-94-6239-069-0

2. Bernhard Pfaff (2013),“Financial risk modelling and portfolio optimization with R”, Wiley, ISBN 978-0-470-97870-2
3. Ruey S. Tsay (2012), “An Introduction to Analysis of Financial Data with R” , Wiley, ISBN: 978-0-470-89081-3
4. Christian Gourieroux& Joann Jasiak (2002), “Financial Econometrics: Problems, Models, and Methods”, Princeton University Press , ISBN: 9780691088723
5. Ren´e Carmona (2014),“Statistical Analysis of Financial Data in R”, Second Edition. Springer, ISBN 978-1-4614-8787-6

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

EMERGING TECHNOLOGIES IN FINANCE

Course Code: MBA (A)-224 **L – 3, Credits – 3**

Objectives:The course aims at providing concepts of Emerging and latest technological advances in Finance and Financial Services. It aims to equip students with latest information about innovation and modern technology used in Finance.

Course Outcomes:

CO1: Understand the growth and trends of financial technology
CO2: Analyze the role of different technologies used in finance industry
CO3: Applications of various technologies in finance industry
CO4: Understanding the blockchain technology and its potential uses

Course Content

Unit I

Introduction: Introduction of Key Technological Trends Affecting Financial Services; Evolution and Transformation of using Technology in Financial services;Digital India and its role in promoting FinTech, Role of Fintech in financial inclusion **(10 Hours)**

Unit II

Technologies reshaping the financial services: Databases, Data Mart, Data warehousing Characteristics, Data warehousing architecture, OLAP **(10 Hours)**

Unit III

Expert systems and Artificial Intelligence: Expert systems, Artificial Intelligence and Machine Learning in Finance, Data mining techniques and its applications in finance **(10 Hours)**

Unit IV

Blockchain technology and Cyber Security: Understanding of Block Chain Technology, its potential and applications, Overview of crypto currency, Risks and challenges in financial data security, Cyber Security, Threats, Methods of data protection in cyber space **(12 Hours)**

Suggested Readings: (Latest Editions)

1. Rubini, A. Fintech in a Flash: Financial Technology Made Easy. Zaccheus.
2. Hill, J. Fintech and the Remaking of Financial Institutions. Elsevier.
3. Chishti, S. &Barberis, J. The FINTECH Book. Wiley.
4. Phadke, S. FinTech Future. Sage Publications.
5. Anahory, S., & Dennis. Data Warehousing in the Real World. Pearson.
6. Adriaans, P., &Zantinge, D. Data Mining. Pearson.

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

EQUITY VALUATION

Course Code: MBA (A) - 226 **L - 3, Credits – 3**

Objectives: This course aims at enabling students to acquaint the students about various equity valuation approaches. The course will enable students to understand and apply these valuation techniques for effective equity valuation in real life situation.

Course Outcomes:

CO1: Understand and critically discuss concepts of equity valuation like valuation process, risk and return, and required rate of return on equity.
CO2: Conduct valuations based on methods like the Discounted Cash Flow method, Gordon Growth model, H-model etc.
CO3: Understand and apply skills in practical financial analysis and conduct a relative valuation and residual income valuation.
CO4: Critically analyse publicly available information for valuation of equity.
CO5: Understand the approaches in private company valuation and loose ends in valuation.

Course Content

Unit I

Equity Valuation: Meaning of Value, Valuation Applications, Valuation process, Role of analyst in valuation, Concept of return, Risk premium, required return on equity, Discount rate selection in relation to cash flow, Measuring Cash flows, Forecasting cash flows, Equity Discounted cash flow Models: Gordon Growth Model, Two stage & Three stage dividend discount model, H model, FCFF and FCFE models. (11 hours)

Unit II

Relative Valuation: Meaning, ubiquity of Relative Valuation, Advantage and limitations of relative valuation, standardized values and multiples such as Earnings, Revenue, Sector specific multiples, criteria for selection of multiples, Price and Enterprise Value multiples in valuation: The method of comparable, Method based on Forecasted Fundamentals. Price multiples, Enterprise value multiples, international considerations when using multiples. (11 hours)

Unit III

Residual Income valuation: Residual Income, Use of Residual Income in Equity Valuation, The Residual Income Model-Determinants, Single stage and multi stage Residual Income Valuation, Residual Income Valuation versus other approaches of valuation- its strengths, weaknesses and Guidelines in using it, accounting and international considerations. (10 hours)

Unit IV

Private Company Valuation and Loose Ends in Valuation: Private Company Valuation Approaches. Comparable value of firms. Private Equity Valuation. Valuation of intangibles, Value of liquidity, Value of Synergy and Value of Transparency. (10 hours)

Suggested Readings: (Latest Editions)

1. Damodaran, A., Damodaran on Valuation: Security Analysis for Investment and Corporate Finance. Wiley Publications.
2. Healy, P. M., Palepul, K.G., Business Analysis Valuation: Using Financial Statements. South-Western College Pub.
3. Pinto, J. E., Henery, E., Robinson, T.R., Stowe, J.D., Miller, P.F., Equity Asset Valuation. Wiley Publications.
4. Valentine, J., Best Practices for Equity Research Analysts: Essentials for Buy-Side and Sell-Side Analysts. Mc Graw Hill.
5. Davidson, I., Tippett, M., Principles of Equity Valuation. Routledge.
6. English, J., Applied Equity Analysis: Stock Valuation Techniques for Wall Street Professionals. McGraw-Hill Education.

COs and POs Mapping - MBA (Analytics) Programme														
Semester & Course Title	**Subject Code**	**Course Outcomes**	**Program outcomes**											
SEMESTER III			**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PSO1**	**PSO2**	**PSO3**
Strategic Management	MBA(A) 201	CO1	3	2	2	2	2	1	1	2	1	3	2	2
		CO2	3	2	2	2	1	1	2	1	2	3	3	2
		CO3	2	3	2	2	1	2	3	2	1	2	3	2
		CO4	1	2	2	1	2	1	2	2	1	2	1	2
Entrepreneurship Development & Start Ups	MBA(A) 203	CO1	2	3	1	2	1	1	2	3	2	3	3	3
		CO2	3	3	3	3	3	2	2	2	3	1	2	3
		CO3	3	3	2	3	3	2	2	3	3	3	2	3
		CO4	3	3	3	3	3	2	2	3	3	3	2	3
Predictive Analytics and Big Data	MBA (A) - 205	CO1	3	2	1	2	3	3	2	3	3	2	2	3
		CO2	3	3	1	2	3	3	2	3	3	3	3	2
		CO3	3	3	1	1	3	3	2	3	3	3	2	2
		CO4	3	3	1	2	3	3	2	3	3	2	2	3
Artificial Intelligence and Machine Learning	MBA (A) - 207	CO1	2	2	1	1	1	1	1	1	2	2	3	3
		CO2	1	2	2	2	2	1	1	2	2	2	1	2
		CO3	2	2	2	2	2	1	1	1	1	3	2	2
		CO4	3	3	2	1	1	1	1	1	1	2	3	1
Database Management Systems	MBA (A) - 209	CO1	1	1	2	2	3	3	1	2	2	2	3	3
		CO2	1	2	2	2	3	3	2	2	2	2	1	2
		CO3	1	2	2	2	3	3	2	2	2	3	2	2
		CO4	1	1	2	2	3	3	2	2	2	3	2	2

		CO5	1	1	2	2	3	3	2	2	2	3	2	3
Design Thinking and Innovation	MBA (A) - 211	CO1	3	2	2	3	2	2	3	3	2	2	3	3
		CO2	2	2	3	3	2	2	2	3	2	2	2	3
		CO3	3	3	2	3	3	3	2	2	2	2	2	3
		CO4	2	3	1	3	2	3	2	3	2	1	2	3
Summer Training Report	**MBA (A) - 213**	CO1	3	3	3	3	3	3	2	3	3	3	2	2
		CO2	2	2	2	3	3	2	2	3	3	2	3	2
		CO3	3	3	3	3	3	3	3	3	3	2	3	3
		CO4	3	3	3	3	3	2	3	3	3	2	2	3
		CO5	2	3	2	3	3	3	2	3	3	2	2	3
HR Analytics	**MBA (A) - 215**	CO1	2	3	1	3	2	3	2	1	2	2	2	3
		CO2	3	3	1	3	2	1	2	3	3	2	3	3
		CO3	2	3	3	2	1	3	2	1	2	3	2	3
		CO4	3	2	3	2	3	2	2	3	1	3	2	3
Organizational Analytics	**MBA (A) - 217**	CO1	3	2	1	3	2	3	2	1	2	2	2	3
		CO2	3	2	3	1	2	1	2	3	3	3	2	3
		CO3	3	3	3	2	1	3	2	1	2	3	2	2
		CO4	3	2	2	3	3	2	3	3	1	3	3	2
Talent Management	**MBA (A) - 219**	CO1	2	3	2	3	2	1	3	1	3	3	2	2
		CO2	3	2	3	2	1	2	1	1	3	3	3	2
		CO3	2	3	3	3	3	1	2	2	2	3	2	2
		CO4	3	3	3	3	3		1	2	1	3	2	1
Social Media Analytics	**MBA (A) - 221**	CO1	2	3	2	3	3	3	3	3	2	3	3	2
		CO2	2	3	2	3	3	2	2	3	3	3	2	1
		CO3	2	3	3	2	2	1	3	3	3	2	3	2
		CO4	3	2	3	2	3	2	2	3	2	3	2	2
Retail Analytics	**MBA (A) - 223**	CO1	2	3	1	3	2	3	1	3	1	3	2	2

		CO2	2	3	1	3	2	3	1	3	2	2	3	3
		CO3	3	2	3	2	3	2	3	2	3	2	2	3
		CO4	2	3	2	1	1	2	3	3	2	2	2	3
Consumer Behaviour	**MBA (A) - 225**	CO1	3	3	3	1	2	1	1	2	3	2	2	2
		CO2	3	3	2	2	3	1	2	2	3	3	3	2
		CO3	3	3	2	1	3	2	1	1	3	3	2	2
		CO4	3	3	3	2	3	3	3	2	3	2	2	2
Financial Risk Analytics	**MBA (A) - 227**	CO1	3	3	1	3	3	3	1	3	3	2	3	3
		CO2	2	2	2	3	2	2	2	3	2	2	3	2
		CO3	3	2	3	2	3	2	3	2	1	2	2	3
		CO4	3	2	3	3	3	2	3	3	2	2	3	3
Investment Analysis and Portfolio Management	**MBA (A) - 229**	CO1	2	3	2	3	2	3	2	3	1	3	2	3
		CO2	2	3	1	3	2	2	1	3	2	2	3	3
		CO3	3	2	2	3	3	2	2	3	1	3	2	2
		CO4	3	2	1	3	3	2	1	3	2	3	3	2
Financial Modelling	**MBA (A) - 231**	CO1	3	2	2	3	1	2	3	3	2	2	2	3
		CO2	2	3	3	2	1	3	1	1	1	3	2	3
		CO3	3	2	3	1	2	3	1	3	2	2	3	3
		CO4	2	1	2	2	1	3	2	3	2	2	2	3
Artificial Intelligence and Machine Learning Lab	**MBA (A) - 253**	CO1	2	2	3	3	3	1	3	2	2	2	3	3
		CO2	2	2	3	2	2	1	1	2	2	2	1	2
		CO3	2	3	2	2	2	1	3	1	3	3	2	2
Database Management System Lab	**MBA (A) - 254**	CO1	2	2	3	2	3	3	2	2	2	3	2	2
		CO2	2	2	2	1	3	3	2	2	2	3	2	2
		CO3	3	1	2	2	3	3	2	2	2	3	2	3

Title	Code	Outcomes												
SEMESTER IV			**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PSO1**	**PSO2**	**PSO3**
Major Project Report	MBA(A) 202	CO1	3	3	3	2	3	2	2	3	3	3	2	3
		CO2	3	3	2	1	2	2	2	3	3	2	2	3
		CO3	3	3	3	3	3	2	2	3	3	2	3	3
		CO4	3	3	3	3	3	3	3	3	3	3	2	3
Project Management	MBA(A) 204	CO1	2	2	3	1	1	2	1	2	3	2	3	2
		CO2	3	2	3	3	2	3	2	2	3	2	2	3
		CO3	2	3	3	3	3	2	2	3	3	2	3	2
		CO4	2	2	2	2	3	2	1	2	3	3	2	2
		CO5	2	3	3	3	3	2	3	2	1	2	3	2
		CO6	2	3	3	3	3		2	2	2	3	3	2
Ancient Management Philosophy and Indian Ethos	MBA (A) - 206	CO1	2	2	1	2	1	2	2	3	3	3	2	3
		CO2	2	1	1	2	3	3	2	2	3	3	2	3
		CO3	2	3	1	1	2	3	2	2	3	3	2	2
		CO4	3	2	1	2	3	2	2	1	1	3	1	2
Multivariate Data Analysis	MBA (A) - 208	CO1	3	2	3	1	2	2	2	3	3	2	2	3
		CO2	3	2	3	2	3	1	3	2	2	1	3	3
		CO3	3	2	3	3	2	1	3	2	2	1	2	3
		CO4	3	3	2	1	1	1	1	1	1	2	3	3
Strategic HR Analytics	MBA (A) - 210	CO1	3	2	3	2	3	3	2	2	3	2	3	2
		CO2	3	3	2	3	2	3	2	3	2	3	2	2
		CO3	3	3	3	3	3	3	1	2	3	2	2	2
		CO4	3	3	3	3	3	3	2	2	2	2	3	3
Managing Organizational Development	MBA (A) - 212	CO1	3	3	2	3	3	1	1	2	2	2	3	2
		CO2	3	3	3	3	3	1	2	2	2	2	2	3
		CO3	3	3	3	3	3	1	3	2	2	2	2	3
		CO4	3	2	3	3	3	1	3	2	3	1	2	3

Compensation and Performance Management	**MBA (A) - 214**	CO1	3	2	3	2	2	1	2	2	2	3	2	2
		CO2	2	2	3	3	3	1	3	2	3	3	2	3
		CO3	3	3	3	3	3	2	3	3	3	3	3	2
		CO4	3	3	3	3	3	2	2	3	3	2	1	1
Marketing Analytics	**MBA (A) - 216**	CO1	3	2	2	2	3	3	2	3	3	2	2	3
		CO2	3	3	2	2	3	3	2	3	3	3	2	3
		CO3	3	3	3	3	3	3	2	3	3	2	2	3
		CO4	3	3	3	3	3	3	2	3	3	2	1	3
Supply Chain Analytics	**MBA (A) - 218**	CO1	3	2	1	2	3	2	2	2	1	2	2	2
		CO2	3	2	2	2	2	1	2	2	1	3	2	2
		CO3	2	2	2	1	2	1	2	1	2	2	2	3
		CO4	3	2	2	2	1	2	1	2	1	1	2	3
Digital and Social Media Marketing	**MBA (A) - 220**	CO1	3	2	3	2	3	3	2	2	3	2	2	2
		CO2	3	3	2	3	2	3	2	3	2	3	2	1
		CO3	3	3	3	3	3	3	1	2	3	2	2	2
		CO4	3	3	3	3	3	3	2	2	2	2	3	2
Financial Analytics	**MBA (A) - 222**	CO1	3	2	2	3	3	1	3	3	2	2	2	3
		CO2	2	3	2	3	3	2	2	3	3	3	2	2
		CO3	3	3	3	2	2	1	3	2	3	2	1	3
		CO4	3	2	3	2	3	2	2	3	2	2	1	3
Emerging Technologies in Finance	**MBA (A) - 224**	CO1	3	3	1	3	2	3	2	1	3	3	3	2
		CO2	2	1	2	2	2	3	2	1	2	2	2	2
		CO3	3	2	3	2	3	2	3	2	3	2	2	2
		CO4	2	3	2	1	1	2	3	3	2	3	2	2
Equity Valuation	**MBA (A) - 226**	CO1	3	2	2	2	2	3	2	3	2	3	2	2
		CO2	2	3	2	3	3	2	1	2	2	1	2	3
		CO3	3	3	2	3	3	2	1	2	2	2	2	3

		CO4	3	3	3	3	3	3	2	3	3	3	2	3
		CO5	2	2	2	3	3	2	2	1	2	3	2	2