PRESTIGE

INSTITUTE OF MANAGEMENT & RESEARCH, GWALIOR

AN AUTONOMOUS INSTITUTE ACCREDITED WITH UGC NAAC GRADE 'A' AND NBA (AICTE)

COURSE CURRICULUM

(CBCS SEMESTER WISE)

For

Master of Business Administration

(BUSINESS ANALYTICS)

(Academic Year 2022-24)

Prestige Institute of Management & Research, Gwalior

Airport Road, Opposite DD Nagar, Gwalior

(Madhya Pradesh) INDIA

COURSE STRUCTURE AND SCHEME OF EXAMINATION

MBA –BUSINESS ANALYTICS

SEMESTER - I

S. No	Course code	Course Type	Course Name	L	T	P	Hour/ Week	Credit	Component Marks		Total
		Core/ AE/SD					L+T+P= Total		IA	EA	
1	MBA-B A 101	Core	Management Concepts & OB	3	1	0	3+1+0=4	4	40	60	100
2	MBA-BA 102	Core	Managerial Economics	3	1	0	3+1+0=4	4	40	60	100
3	MBA-BA 103	Core	Financial Reporting and Analysis	3	1	0	3+1+0=4	4	40	60	100
4	MBA-BA 104	Core	Introduction to Business Analytics and Data Science	2	0	4	2+0+2=4	4	40	60	100
5	MBA-BA 105	Core	Business Environment	3	1	0	3+1+0=4	4	40	60	100
6	MBA-BA 106	Core	Business Statistics	3	1	0	3+1+0=4	4	40	60	100
7	MBA-BA 107	SD	Industry Readiness (Personality Development)	0	1	2	0+1+1=2	2	25	25	50
8	MBA-BA 108	SD	Introduction to Python for Business Analytics	0	0	4	0+0+2=2	2	25	25	50
9	MBA-BA 109	SD	Comprehensive Viva	0	0	4	0+0+2=2	2	50	50	100
			TOTAL	17	6	14		30			800

SEMESTER II

S. No	Course code	Course Type	Course Name	L	T	P	Hour/ Week	Credit	Component Marks		Total
		Core/ AE/SD					L+T+P= Total		IA	EA	
1	MBA-BA 201	Core	Marketing Management	3	1	0	3+1+0=4	4	40	60	100
2	MBA-BA 202	Core	Operation & Supply Chain Management	3	1	0	3+1+0=4	4	40	60	100
3	MBA-BA 203	Core	Corporate Finance	3	1	0	3+1+0=4	4	40	60	100
4	MBA-BA 204	Core	Machine Learning & Applications	3	1	0	3+1+0=4	4	40	60	100
5	MBA-BA 205	Core	Human Resource Management	3	1	0	3+1+0=4	4	40	60	100
6	MBA-BA 206	Core	Decision Science	3	1	0	3+1+0=4	4	40	60	100
7	MBA-BA 207	SD	Machine Learning using R (Practical)	0	0	4	0+0+2=2	2	25	25	50
8	MBA-BA 208	SD	Database and SQL Lab (Practical)	0	0	4	0+0+2=2	2	25	25	50
9	MBA-BA 209	SD	Project- Data Analysis with Python	0	0	4	0+0+2=2	2	50	50	100
			TOTAL	18	6	12		30			800

SEMESTER III

S. No	Course code	Course Type	Course Name	L	T	P	Hour/ Week	Credit	Component Marks		Total
		Core /AE/ SD					L+T+P= Total		IA	EA	
1	MBA-B A 301	Core	Big Data Analytics	3	1	0	3+1+0=4	4	40	60	100
2	MBA-BA 302	Core	Multivariate Data Analysis	3	1	0	3+1+0=4	4	40	60	100
3	MBA-BA GE 303	Core	Generic Elective – Group I	3	1	0	3+1+0=4	4	40	60	100
4	MBA-BA GE 304	Core	Discipline Specific Elective-Group II	3	1	0	3+1+0=4	4	40	60	100
5	MBA-BA DSEC 305	Core	Discipline Specific Elective-Group II	3	1	0	3+1+0=4	4	40	60	100
6	MBA-BA DSEC 306	SD	Practical Lab on Big Data Analytics	0	0	4	0+0+2=2	2	25	25	50
7	MBA-BA 307	SD	Data Visualization Lab	0	0	4	0+0+2=2	2	25	25	50
8	MBA-BA 308	SD	Summer Training Report & Presentation	0	0	8	0+0+8=8	4	50	50	100
			TOTAL	15	5	16		28			700

		*Elective Paper in MBA BA III Semester
1	MBA-BA GE 303	GE-01 Consumer Behavior
2	MBA-BA DSEC 306	DSEC-01 Social Media and Web Analytics
3	MBA-BA DSEC 306	DSEC-03 Financial Analytics

***THE ABOVE MENTIONED ELECTIVE COURSES HAVE BEEN DECIDED TO TEACH IN THE THIRD SEMESTER.**

SEMESTER IV

S.No	Course code	Course Type	Course Name	L	T	P	Hour/ Week	Credit	Component Marks		Total
		Core/AE/SD					L+T+P=Total		IA	EA	
1	MBA-BA 401	Core	Entrepreneurship and Small Business Development	3	1	0	3+1+0=4	4	40	60	100
2	MBA-BA 402	Core	Cyber Security & Law	3	1	0	3+1+0=4	4	40	60	100
3	MBA-BA GE 403	Core	Generic Elective – Group II	3	1	0	3+1+0=4	4	40	60	100
4	MBA-BA DSEC 404	Core	Discipline Specific Elective-Group II	3	1	0	3+1+0=4	4	40	60	100
5	MBA-BA DSEC 405	Core	Discipline Specific Elective-Group II	3	1	0	3+1+0=4	4	40	60	100
6	MBA-BA 406	SD	Dissertation Report & Viva Voce	0	2	2	0+2+2=4	4	-	100	100
7	MBA-BA 407	SD	Predictive Analytics using SPSS	0	2	2	0+2+2=4	4	50	50	100
8	Mandatory NON CGPA elective	VAC	Certification Course from NPTEL/SWAYAM								
			TOTAL	15	9	4		28			700

		*Elective Paper in MBA BA IV Semester
1	MBA-BA GE 403	GE-04 Security Analysis and Portfolio Management
2	MBA-BA DSEC 404	DSEC-02 Marketing Analytics
3	MBA-BA DSEC 405	DSEC -04 H R Analytics

*THE ABOVE MENTIONED ELECTIVE COURSES HAVE BEEN DECIDED TO TEACH IN FOURTH SEMESTER.

GRAND TOTAL OF ALL THE SEMESTERS					
Semesters	**Semester 1**	**Semester 2**	**Semester 3**	**Semester 4**	
Credits	**30**	**30**	**28**	**28**	
Grand Total of Credits	**116**				

Discipline Specific Electives (Choose any four from the group)

Code.	Paper	Semester
DSEC-01	**Social Media & Web Analytics**	**III**
DSEC-02	**Marketing Analytics**	**IV**
DSEC-03	**Financial Analytics**	**III**
DSEC -04	**Human Resource Analytics**	**IV**
DSEC -05	**Retail Analytics**	**IV**
DSEC -06	**Data Management and Ethics**	**IV**
DSEC -07	**Digital Marketing Analytics**	**III**
DSEC -08	**Time Series Analysis**	**III**

Generic Electives (Choose any Two from the group)

Code	Paper	Semester
GE-01	**Consumer Behaviour**	III
GE-02	**Sales And Distribution Management**	III
GE-03	**Human Resource Development And Organizational Development**	III
GE-04	**Security Analysis & Portfolio Management**	IV
GE-05	**Financial Econometrics**	III
GE-06	**Compensation Planning**	IV
GE-07	**Talent Management**	IV
GE-08	**Service Marketing And Retail Management**	IV
GE-09	**Branding & Integrated Communication**	IV
GE-10	**Project Appraisal and Finance**	IV

The Scheme of Assessment (including Marks of Sessional, minimum Pass Marks, Division of Examination) & Scheme of Promotion to next Semester will be Governed by Ordinance 168 A of Jiwaji University Gwalior (Based on 14 A of Devi Ahilya Vishwavidyalaya; As Approved by the Coordination Committee in its meeting held on 25/10/2017 and Adopted by Devi Ahilya Vishwavidyalaya in its EC meeting held on 04/12/2017)

MBA_BA I SEMESTER MANAGEMENT CONCEPTS & OB COURSE CODE: MBA_BA –101	Max. Marks: 100Min. Marks: 35 External : 60 Internal : 40

MANAGEMENT CONCEPTS & ORGANISATIONAL BEHAVIOUR

Credit: 4

Course Objectives

The course comprehends the functions of management and individual, group and organizational behavior; models and metrics to measure the behaviors; and associated behavioral & organizational changes.

PROGRAM OUTCOMES

PO1: Apply knowledge of management theories and practices to solve business problems
PO2: Foster Analytical and critical thinking abilities for decision making
PO3: Imbibe value based leadership ability for decision making
PO4: Inculcate the capability to understand, synthesize and communicate global, economic, legal, and ethical aspects of business
PO5: Equipped them with soft and hard skills and to make them industry ready

CO-PO MATRIX

Course Outcomes	PO1	PO2	PO3	PO4	PO5
CO1	3	2	1	2	3
CO2	2	2	2	2	3
CO3	3	3	3	1	2
CO4	3	2	1	2	3
CO5	3	2	3	1	3
AVERAGE	2.8	2.2	2	1.6	2.8

Course Outcomes: Upon completion of this course, the student will be able:

CO1: Integrate management principles into management practices.
CO2: Determine the nature of organization structure.
CO3: Understand and apply control methods.
CO4: Understand models of organizational behavior, perception, organizational change, group dynamism and organizational conflict.
CO5: Measure Employees' attitude and Personality Types, motivation factors, leadership styles, and stress.

Unit 1: Management: Concept, Nature & Functions of Management - Social Responsibilities of Business, Levels of Management, Approaches to management, Evolution of Management.
Planning: Concept & Types of Plans; Planning Process; MBO, Introduction to PERT–CPM.
Decision Making: Decision Making - Techniques and Processes, Managers Making Decision: Rationality, Bounded Rationality.

Unit 2: **Organizing:** Organisation Structure and Design, Principles of organizations.
Staffing: Concept & Process

Unit 3: **Directing:** Concept, Principles & Techniques of Directing.
Controlling: Concept; Process; Types of Control: Balance Scorecard, factors influencing control effectiveness.

Unit 4: **Introduction to Organizational Behavior:** Nature; Importance; contributing disciplines, Models of OB.
Perception and Attribution Theory: Concept; Process; Perceptual Errors.
Learning: Theories of Learning.
Attitude: Concept; Process; Importance; Cognitive Dissonance Theory
Personality: Types and Theories of Personality; Big Five Personality Model.
Motivation: Concept; Theories of Motivation: Need Hierarchy Theory, Two Factor theory; Mc Clellands' Theory, Expectancy theory, Self Determination Theory, Equity theory, Organizational Justice.

Unit 5: **Leadership:** Style and Theories of Leadership: Trait.
Organisational Power and Politics: Understanding dynamics of Power, Intrapersonal, Interpersonal, Intergroup and Institutional power
Conflict: Concept; Classification, Resolution of Conflict; Grievance Handling.
Organizational Change: Nature and forces of change, Resistance to change and Kurt Lewin theory of change.

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Suggested Readings:

- *Gilbert, D.R. Stoner, F. & Freeman, R.E. (2001). Management. Pearson Education.*
- *Weihrich, H. & Koontz, H. (2005). Management: A Global Perspective. Tata McGraw Hill.*
- *Robbins, S. P. & Coulter, M. (2012). Management. Pearson. Ouchi, W. G. & Dowling, J. B. (1974). Defining the Span of Control. Administrative Science Quarterly. 357-365.*
- *Watkins, K. E. & Marsick, V. J. (2003). Demonstrating the Value of an Organization's Learning Culture: The Dimensions of the Learning Organization Questionnaire. Advances in Developing Human Resources. 132-151.*
- *Fred; L. (2011). Organizations Behaviour (12th edition ed.). New York; Mc Graw Hill.*
- *Robbins, Judge & Vohra (2018). Organizational Behavior (18th edition).New Delhi: Pearson Education.*
- *K; A. (2016). Organizational Behaviour (12th edition ed.). New Delhi: Himalaya Publishing House.*
- *Stephen; P. (2013). Organizational Behaviour (15th edition ed.). New Delhi: Pearson Education.*
- *Udai; P. (2016). Understanding Organizational Behaviour (4th edition ed.). New Delhi: Oxford Higher Education.*

MBA_BA I SEMESTER MANAGERIAL ECONOMICS PAPER CODE: MBA_BA –102	Max. Marks: 100 Min. Marks: 35 External : 60 Internal: 40

Credit: 4

MBA (BA) 102 MANAGERIAL ECONOMICS

Course Objective:

The basic aim of this course is to impart knowledge of basic statistical tools &techniques with emphasis on their application in Business decision process and Management. Statistical analysis informs the judgment of the ultimate decision-maker—rather than replaces it—some key conceptual underpinnings of statistical analysis will be covered to insure the understandability of its proper usage.

Course Outcomes:

After completion of this course the student will be

CO1: understanding theories, concepts, processes and frameworks of demand and supply, market structures, production cost and marketing strategies and demonstrate national income; identify its components, demonstrate circular flow of income and illustrate inflation and its types

CO2: analyzing real world business problems with reference to economic environment, conditions, and indicators and various income identities with government

CO3: applying time series analysis, forecasting technique and updating predicted probabilities to analyze risk evaluation, encourage critical thinking and analytical skills which help in taking complex economic decision

CO4: evaluating and measuring Uncertainty, Probability, and expected value, Analysis using Excel-regression analysis using time series data.

CO-PO MATRIX				
Course Outcomes	**PO1**	**PO2**	**PO3**	**PO4**
CO1	3	3	2	1
CO2	3	3	3	2
CO3	3	3	3	2
CO4	2	3	1	3
AVERAGE	**2.6**	**2.6**	**2**	**2.2**

Unit 1: Introduction:

Introduction to Economics & Managerial Economics, Concept of Managerial Economics, Scope, Objectives of Firm, Problem in Decision making, Principles for decision making (Five fundamental concept) Theory of the firm and Demand Analysis – Theory of the firm and Demand Analysis : Basics of demand, determinants of demand, Law of Demand, Exceptions of Law of Demand, Shift in Demand Curve. Demand Forecasting

Unit 2: Elasticity, Production and Cost Analysis

Demand Elasticity, Price Elasticity of Demand, Income Elasticity of Demand, Cross elasticity of demand; Concept of Supply & Elasticity Production Analysis: Basic production concepts, Production with one variable input, ISOQUANT with optimal input combination and production function in the long run.

Cost of Production: Relevant costs, The cost of production, TR, AR and MR, Cost analysis.

Unit 3: Market Structure and Competitive Environment

Market Structures and Competition: Perfect Competition and Price & Output determination, Monopoly and Price & Output determination, Monopolistic competition& Price & Output determination, Oligopoly model(Price Rigidity Model)

Unit 4: Decision Making Applications

Uncertainty, Probability, and expected value, Sensitivity Analysis for One variable & Two Variable using Excel, Decision Trees, demand forecasting, Analysis using Excel- regression analysis using time series data.

Unit 5: National Income:

Concepts; Measuring the Value of Economic Activity through Gross Domestic Product, GDP Deflator, Real GDP vs. Nominal GDP, Demographic dividend, Green economics and HDI (Human development Index);Inflation: Types; Causes and Measurement; Business Cycle

Text Books:

- *By Paul G. Keat, Philip K.Y. Young, Stephen E. Erfle and Sreejata Banerjee "Managerial Economics: Economics tools for today's decision makers"Pearson Paperback, 7th edition, 2018*

Suggested Readings:

- *Samuelson & Marks, "Managerial Economics: International Students Version" Wiley, 6th edition, 2014*
- *Truett & Truett, "Managerial Economics", John Wiley & Sons, 8th edition, Singapore, 2004*
- *Samuelson & Nordhus, "Economics", Tata McGraw-Hill Edition, 16th edition, New Delhi, 1998*
- *Petersen, Lewis and Jain, "Managerial Economics", Pearson Education, New Delhi, 2006.*
- *Hirschey, "Economics for Managers", Thompson, New Delhi, 2006*
- *Suma Damodaran, "Managerial Economics", Oxford University Press, 2006*

MBA_BA I SEMESTER **FINANCIAL REPORTING AND ANALYSIS** **PAPER CODE: MBA_BA –103**	**Max. Marks: 100** **Min. Marks: 35** **External : 60** **Internal: 40**

Credit: 4

FINANCIAL REPORTING AND ANALYSIS

Course Objective:

be able to estimate the quality of financial reporting, identify possible management practices. Analyze financial statements using knowledge of the underlying accounting principles, and financial analysis techniques and demonstrate the ability to prepare prospective financial information.

Learning Outcomes

- To know the concept of Financial Reporting and also describe the different entities subject to Reporting.
- To understand the financial reporting in both the private and public sector use accounting information as the basis for action.
- To make familiar with the use accounting terminology and understand to some extent accounting regulation;
- To Understand the economic context of the financial reporting and the interplay between different interested parties in this process;
- To understands the financial decision making on the basis of analysis.

Unit 1: Financial Analysis and reporting: An Introduction

Chapter 1: Financial Reporting: An Overview- Concept of financial reporting, financial reporting and financial statements, objectives of financial reporting, uses of financial information, benefits of financial reporting, Qualitative characteristics of financial reporting information.

Chapter 2: Conceptual Framework- Concept, need and benefits of conceptual framework, ASB' framework for preparation and presentation of financial statements, IASB's (earlier IASC) conceptual framework, USA's FASB's conceptual framework.

Unit 2: Understanding Financial Statements

Chapter 3: Understanding Financial Statement; Nature, Legal Requirements under Companies Act 2013, Preparation of Statement of Profit & Loss Account and Balance Sheet; Cash Flow Statement (IND AS 3)- Classification of Cash Inflows and Outflows, presentation of cash flow statement, preparation of cash flow statement. Cash Flow Statement (IND AS 7); Major changes in AS 7 vis-a-vis notifies AS 3.

Chapter 4: Additional Disclosure Statements; need for additional disclosure statements, director's report, auditor's report on financial statement; Corporate Governance- Concept of Corporate Governance, benefits, regulatory framework (SEBI guideline and listing agreement).

Unit 3: Elements of Financial Statements

Chapter 5: Inventory, meaning of inventory, objectives of inventory measurement, Inventory Systems, Inventory Costing methods (Cost price methods, average price methods, normal price methods, specific identification method). Lower of Cost or market (LCM rule).

Chapter 6: Assets- Meaning and characteristics of Assets, Assets valuation; objectives/concepts, types of assets, Introduction to IND AS 10 (Property, Plant and Equipment), Provisions and features of IND AS 16; IND AS 19- Provisions of Lease.

Chapter 7: Liabilities- meaning of Liabilities, types of liabilities, features of AS 22 about accounting for taxes on Income.

Chapter 8: Revenues, Expenses, Gains and Losses- Concept of revenues and expenses, revenue recognition criteria, concept of gains and losses, difference between revenue and gains.

UNIT 4: Analysis and Interpretation of Financial Statements

Chapter 9: Financial Statement Analysis- Meaning and Objectives, Types of financial Analysis, Techniques of Financial Statement Analysis, Financial Statement Valuation by types of Industry.

Chapter 10: Ratio Analysis- meaning, advantages, practical problems on different classification of ratios.

Chapter 11: Expanded Analysis- Use of ratios for industry wise implications; Special Industries i.e., Banks, Utilities, Oil and Gas, Transportation, Insurance, Real Estate Companies. development of financial reporting by corporate sector, financial ratio used in annual reports, management use of financial analysis, Graphing financial Information, management discussion & Analysis.

UNIT 5: Accounting Standards in India

Chapter 12: Accounting Standards- meaning, benefits of accounting standards, standard setting, difficulties in standard setting, types of accounting standard, standard setting in India, Existing procedure for setting standard, Applicability of Accounting Standards

Chapter 13: Convergence with IFRSs- nature of Harmonization, convergence of accounting standards, Arguments for global convergence, benefits of global accounting standards, IASB and harmonization, Indian Accounting Standard (IND AS), History of IFRS-converged Indian Accounting Standards (IND AS), Government of India-commitment to IFRS converged IND AS.

Reference Readings:

- *Gibson, C. H. (2012). Financial Reporting and Analysis. United States: Cengage Learning.*
- *Gibson, C. (2008). Financial Reporting and Analysis: Using Financial*
- *Accounting Information. United States: Cengage Learning.*
- *Financial Reporting and Disclosure Practices. (2000). India: Deep & Deep Publications.*
- *Corporate financial reporting and analysis, second edition. (2019).PHIlearning Pvt. Ltd.*

MBA_BA I SEMESTER INTRODUCTION TO BUSINESS ANALYTICS AND DATA SCIENCE PAPER CODE: MBA_BA –104	Max. Marks: 100 Min. Marks: 35 External : 60 Internal: 40

Credit: 4

INTRODUCTION TO BUSINESS ANALYTICS AND DATA SCIENCE

Course Objectives:

- Understanding the Role of Business Analyst and Data Science in business.
- Understanding the basic concept of data management and data mining techniques
- To understand the basic concept of machine learning
- To understand the application of business analysis.
- Understanding the basic concept of Data Science Project Life Cycle.

Course Outcomes:

Upon the successful completion of this course, the student will be able to:

CO1. Understand the basics of business analytics, types, data science and career opportunities.
CO2. Determine the process of data collection, preprocessing, and handling Data science project life cycle.
CO3. Understand the data mining concept and its techniques.
CO4. Understand and Analyzing machine learning concept.
CO5. Explore the application of business analytics in different domain.

CO/PO MATRIX						
Course Outcomes	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**
CO1	**3**	**2**	**2**	**1**	**1**	**2**
CO2	**3**	**2**	**3**	**2**	**2**	**2**
CO3	**3**	**2**	**3**	**2**	**1**	**2**
CO4	**3**	**3**	**2**	**2**	**1**	**2**
CO5	**2**	**3**	**3**	**3**	**2**	**2**
AVERAGE	**2.8**	**2.4**	**2.6**	**2**	**1.4**	**2**

Unit 1: (6 Hrs.) Introduction:

What is business analytics? Historical Overview of data analysis, Data Scientist vs. Data Engineer vs. Business Analyst, Career in Business Analytics, what is data science, Why Data Science, Applications for data science, Data Scientists Roles and Responsibility, Types of business analytics

Unit 2: (8 Hrs.) Data Science Project Life Cycle:

Business Requirement, Data Acquisition, Data Preparation, Hypothesis and Modeling, Evaluation and Interpretation, Deployment, Operations, Optimization.

Data: Data Collection, Data Management, Big Data Management, Organization/sources of data, Importance of data quality, Dealing with missing or incomplete data, Data Visualization, Data Classification

Unit 3: (8 Hrs.) Introduction to Data Mining:

The origins of Data Mining, Data Mining Tasks, OLAP and Multidimensional data analysis, Basic concept of Association Analysis and Cluster Analysis.

Unit 4: (6 Hrs.) Introduction to Machine Learning:

History and Evolution, AI Evolution, Statistics Vs Data Mining Vs, Data Analytics Vs, Data Science, Supervised Learning, Unsupervised Learning, Reinforcement Learning, Frameworks for building Machine Learning Systems.

Unit 5: (8 Hrs.) Application of Business Analysis:

Retail Analytics, Marketing Analytics, Financial Analytics, Healthcare Analytics, Supply Chain Analytics.

Text Books:

- *Essentials of Business Analytics: An Introduction to the methodology and its application, Bhimasankaram Pochiraju, Sridhar Seshadri, Springer*
- *Introduction to Machine Learning with Python: A Guide for Data Scientists 1st Edition, by Andreas C. Müller, Sarah Guido, O'Reilly*
- *Introduction to Data Science, Laura Igual Santi Seguí, Springer*

Reference Book:

- *Introduction to Data Mining, Pang-Ning Tan, Michael Steinbach, Vipin Kumar, Pearson Education India*
- *An Introduction to Business Analytics, GerKoole, Lulu.com, 2019*

MBA_BA I SEMESTER **BUSINESS ENVIRONMENT** **PAPER CODE: MBA_BA –105**	**Max. Marks: 100** **Min. Marks: 35** **External: 60** **Internal: 40**

MBA (BA) –105 BUSINESS ENVIRONMENT

Credit– 04

Course Objective

The course details about the environmental forces, both external and internal and their interaction and effect on business.

Course Outcomes: Upon the successful completion of this course, the student will be able to:

CO1: Understand the concept, factors of the business environment and interaction between different environments.

CO2: Evaluate the global environment, various laws impacting the business.

CO3: Understand various government policies, institutions and its role in business.

CO4: Understand the concept, role and process of EXIM policy, FDI, WTO, IMF, RBI, MSME, Global environment.

CO5: Practical learning of SWOT, Stock Exchange and Analysis of companies.

CO/PO METRIX					
	CO1	**CO2**	**CO3**	**CO4**	**CO5**
PO1	**2**	**3**	**3**	**2**	**2**
PO2	**2**	**3**	**2**	**3**	**2**
PO3	**2**	**2**	**3**	**3**	**3**
PO4	**3**	**2**	**3**	**3**	**3**
PO5	**2**	**3**	**3**	**3**	**2**
Average	**2**	**2.5**	**2.8**	**2.8**	**2.33**

Unit 1: Business Environment-meaning, importance; Environmental Scanning- Meaning, Scope and Process, Internal and External Environment; Interaction between Internal and External Environment; Basic Philosophies of Capitalism and Socialism with their variants; Concept of Mixed Economy.

Unit 2: Competition Act 2002 (with background of MRTP); FEMA Act 2000 (with background of FERA); Stock Exchange, SEBI Act 1992; Consumerism, Consumer Protection Act 1986 (Consumer Protection Bill 2019).

Unit 3: Industrial policy in India, Major Changes; Monetary Policies; International Monetary Fund; World Bank; Depository System in India; RBI- Roles, Functions

Unit 4: Introduction to MSME- Concept, Evolution, their role and significance in economic development, Policies for MSME, Challenges and Opportunities of MSMEs in the current scenario.

Unit 5: Preparation of Project report on MSME; SWOT Analysis of companies.

Suggested Readings:

- *Cherunilam, F. (2010). Business Environment. Himalaya Publishing*
- *House. Paul, J. (2010). Business environment. Tata McGraw-Hill Education.*
- *Shaikh, S. (2010). Business Environment (2/E ed.). Pearson Education India.*

MBA_BA I SEMESTER BUSINESS STATISTICS PAPER CODE: MBA_BA –106	Max. Marks: 100 Min. Marks: 35 External : 60 Internal: 40

Credit 4

MBA (BA) –106 BUSINESS STATISTICS

Course Objective: This course aims to equip students coming from diverse streams to handle data meaningfully and to ensure that statistics is interpreted correctly.

Course Outcomes: Upon successful completion of this course students will be able to

CO-1. Understand the basic concept of descriptive and inferential statistics and produce appropriate graphical and numerical descriptive statistics for different types of data.

CO-2. Apply probability rules and concepts relating to discrete and continuous random variables.

CO-3. Demonstrate and understand normality and its distribution.

CO-4. Use regression models to analyses the underlying relationships between the variables.

CO-5. Conduct and interpret a variety of hypothesis tests to aid decision making in a business context.

CO-6. Use statistical package frequently used by practitioners to analyses the data.

CO-PO Matrix					
Course Outcomes	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**
CO1	**3**	**3**	**3**	**3**	**3**
CO2	**3**	**3**	**2**	**3**	**3**
CO3	**3**	**3**	**2**	**3**	**3**
CO4	**3**	**3**	**3**	**3**	**3**
CO5	**3**	**3**	**3**	**3**	**3**
CO6	**2**	**3**	**2**	**3**	**3**
Average	**2.8**	**3**	**2.5**	**3**	**3**

Unit 1: **Basic concept of Statistics:** Importance of Statistics, data collection methods: Primary and secondary data, data classification, data tabulation.

Presentation of Data: Bar Diagrams, Histograms, Frequency Polygon, and Frequency Distribution Curves.

Unit 2: **Measures of Central Tendency and Dispersion**: Mean, Median and Mode and their implications, Range, Mean Deviation, Standard Deviation, Coefficient of variation (C.V.), Skewness, Kurtosis.

Unit 3: **Correlation:** Meaning and types of Correlation, Karl Pearson and Spearman Rank Correlation.

Regression: Meaning, Regression Equations and their Application, Partial and Multiple Correlation and Regression.

Unit 4: **Probability:** Concept of Probability and its Uses in Business Decision, Addition and Multiplication Theorems, Bayes Theorem and its applications. **Probability Theoretical Distribution:** Concept and Application of Binomial, Poisson and Normal Distribution.

Unit 5: **Test of Significance**: Sampling Distribution, Formulation of hypothesis, Application of Z-test, t- test, F-test, Chi-square test, Techniques of association of attributes. Introduction to Business Analytics, Use of spread sheet to analyze data: descriptive and predictive analytics.

Suggested Readings:

- *Keller, G. (2015). Statistics for Management and Economics, Abbreviated. Cengage Learning.*
- *Levine, D. M., Berenson, M. L., Stephan, D., & Lysell, D. (1999). Statistics for managers using Microsoft Excel (Vol. 660). Prentice Hall Upper Saddle River, NJ.*
- *Beri, G. C. (2009). Business Statistics, 2E. Tata McGraw-Hill Education.*
- *Black, K. (2019). Business statistics: for contemporary decision making. John Wiley & Sons.s*

MBA_BA I SEMESTER INDUSTRY READINESS PAPER CODE: MBA_BA –107	Max. Marks: 100 Min. Marks: 35 External : 60 Internal: 40

03 Credits

INDUSTRY READINESS

Course Objectives:

The student is able to develop the required skills to get placement through personality development and communication.

Course Outcomes:

CO-1. Students will learn fine prints of business communication.
CO-2. Students will be able to participate effectively into group discussion.
CO-3. Students will learn how to face interviews through mock sessions.
CO-4. Students will learn presentation skills.
CO-5. Students will be able to write business letters and official communication.
CO-6. Students will be able to effectively use social media for communication.

CO-PO Matrix					
Course Outcomes	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**
CO1	3	3	3	3	3
CO2	3	3	2	3	3
CO3	3	3	2	3	3
CO4	3	3	3	3	3
CO5	3	3	3	3	3
CO6	2	3	2	3	3
Average	**2.8**	**3**	**2.5**	**3**	**3**

Interviews: Online and Off Line

Coverage for Online Interviews: Modes of Conducting Online Interviews (Interview Via E-Applications Like Zoom, Cisco Webex, Google Meet, Google Duo, Google Hangout etc., Telephonic Interviews), Pre-Requisites for appearing for online interviews, Key pints to remember pre, During and Post Interview, Do's and Don'ts of Online Interviews, Evaluation parameters of Online Interview.

Coverage for Offline Interviews: Pre-Requisites for appearing in Offline interviews, Key pints to remember pre, During and Post Interview, Do's and Don'ts of physical Interviews, Evaluation parameters of Offline Interviews Interview.

Areas to be Covered for Both: Appearance, Content, SWOT of candidate as well as organization, Gestures, Postures, Accent, how to defend your resume, Fitment for the Job role.

Group Discussion: Online and Offline

Communication in Organization

Coverage: Basics of Email Writing to Senior, Colleagues and Junior, Communication via Telephonic call at all level of organization, Selection of words while texting your seniors, Managers, colleagues and Juniors, What need not to be there in your communication via any mode to your Seniors, managers, Colleagues and Juniors, Sample of Professional Email, Text messages, What's App messages, Do's and Dont's while you are communicating at different hierarchical level in your organization, Importance and need of Acknowledgement to communication which you receives at different level in organization, How to greet your seniors, Colleagues and Juniors face to face or via any virtual Mode, Few sample sentences, idioms, Phrases, Salutations for making communication effective

MBA_BA I SEMESTER INTRODUCTION TO PYTHON FOR BUSINESS ANALYTICS PAPER CODE: MBA_BA –108	Max. Marks: 50 Min. Marks: 18 External : 0 Internal: 50

INTRODUCTION TO PYTHON FOR BUSINESS ANALYTICS (PRACTICAL)

Course Objectives:

Upon successful completion of the course, students will be able to

- Predict the result of a given piece of Python code.
- Write Python code to read, write, filter, merge, summarize, and graph a given dataset.
- Analyze data from a variety of industries and uncover business insights.
- Communicate effectively the purpose, methodology, and result of an analysis involving Python to a non-technical business audience.

Learning Outcomes: On completion of this course student will be able to learn

CO 1. Understand the basic concept of programming used in Python.
CO 2. Apply variables, statements, strings and files used in Python programming.
CO 3. Demonstrate the rules and logic applied on data with Python.
CO 4. Use inbuilt models available in Python programming to analyze data
CO 5. Interpret a variety of alternatives to tests to aid decision making in a business context by using models in Python programming.

CO/PO MATRIX						
Course Outcomes	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**
CO1	**3**	**3**	**3**	**2**	**1**	**2**
CO2	**2**	**3**	**2**	**1**	**1**	**3**
CO3	**3**	**3**	**3**	**3**	**2**	**3**
CO4	**3**	**3**	**3**	**3**	**2**	**3**
CO5	**3**	**3**	**3**	**3**	**2**	**3**
AVERAGE	**2.8**	**3**	**2.8**	**2.4**	**1.6**	**2.8**

Course

1. Programming Logic: Introduction to Programming, Python Types, Variables, Statements and Conditional Execution, Functions, Iterations
2. Data Structures: Strings and Files, Lists and Dictionaries, Tuples and Set, Pandas Data Frame Basics, Pandas Data Structure, Reading and Writing CSV files
3. Basic Analysis: Introduction to Plotting, Data Assembly, Missing Data
4. Data Munging: Tidy Data and Data Types, Text Data, Pandas Apply and Groupby Operations
5. Case studies

Text Books:

- *"Python for Everybody" by Charles R. Severance*
- *"Pandas for Everyone" by Daniel Y. Chen*
- *Learning Python, 5th Edition by Mark Lutz, O'reilly*

Suggested Readings:

- *Python Programming for the Absolute Beginner By Michael Dawson, 2nd Edition, Premier Press,2003*
- *Image Processing and Pattern Recognition, Volume 5, 1st Edition, By Cornelius Leondes, Academic Press*

MBA_BA II SEMESTER MARKETING MANAGEMENT PAPER CODE: MBA_BA –201	Max. Marks: 100 Min. Marks: 35 External : 60 Internal: 40

MARKETING MANAGEMENT

Course Objective:

The overall objectives are to understand consumers and to identify profitable Marketing strategies. Understand the Marketing context: Market, performance metrics, and role of strategic planning in marketing. Describe marketing strategies of segmenting, targeting, positioning, and differentiation. Know how to use marketing functions of product, pricing, distribution, and marketing communication for a firm's Marketing strategy. Evaluate several customer relationship management (CRM) strategies using analytics.

Course Outcomes:

On completion of the course students will

CO1: Memorize the concepts related to marketing management.
CO2: Explain the concepts of the marketing mix.
CO3: Apply various marketing mix tools.
CO4: Examine the effectiveness of various strategies used for marketing.
CO5: Evaluate the corporate and unit level marketing plan.
CO6: Synthesize the integrated and comprehensive marketing plan**.**

CO/PO MATRIX					
COS	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**
CO1	3	4	3	4	4
CO2	3	3	3	4	3
CO3	3	3	4	4	4
CO4	4	4	3	3	3
CO5	3	3	2	2	3

Unit 1 **INTRODUCTIONTO MARKETING :** Definition, Nature, Elements and Scope of Marketing; Marketing concepts; Marketing philosophies. Holistic Marketing, Concept of marketing orientation and consumer orientation; Concept of marketing environment- Micro and Macro. Qualities of Marketing personnel.

Unit 2 **MARKETING STRATEGY:** Market Segmentation- Purpose and Methods of Marketing Segmentation, Levels of segmentation, Patterns, Bases of Segmentation. Concept of Targeting: Selection of Target Markets, Strategies, Concept of positioning: Types, major errors, Product Differentiations: Variables in Differentiation. Sample corporate segmentation.

Unit 3 **Marketing Mix:** Product PIanning - Product Mix Decisions, Product Line, New Product Development, Product Life Cycle; Branding: Brands and Brand strategies; Pricing: Objectives, Methods, strategies; Channel of Distribution(COD): Levels, role, COD Strategies. Role in Value Chain -Inbound and outbound logistics; Promotional Mix: Sales Promotion, Advertisement, personal Selling and Sales Management, Public Relation, Publicity.

Unit 4 **E-MARKETING RESEARCH :** Data Drive Strategy – Marketing Knowledge Management; Social Media Marketing: defining goals and measurement plans, Categories of Social Media, evaluating ROI; improving post performance; Technology Enabled Approaches in Marketing, Real-Space Approaches, Marketing Databases and Data Warehouses; Data Analysis and Distribution,

Unit 5 RETAIL ANALYTICS: Customer Analytics Overview, Quantifying Customer Value; The digital evolution of retail marketing, Digital natives, Search Engine Optimization: content marketing, search analytics; Website Analytics: common metrics, dimensions, and KPIs; Social Listening: share of voice, sentiment analysis, and other User Generated Content.

Text Books:

- *Kotler, P., Keller, K. L. ,Koshy, A., Jha, M. Marketing Management: A South AsianPerspective. New Delhi: Pearson Education , 14th edn,.2013*
- *Rajan, S. Marketing Management. India: New Delhi: Tata McGraw-Hill Education. 4thedn,2005*
- *Digital Marketing: Strategy, Implementation and Practice, Chaffey D., Ellis-Chadwick F., Pearson, 5th Edition, 2012*

Suggested Readings:

- *David MeermanScott, "The New Rules of Marketing and PR: How to Use Social Media,Blogs, News Releases, Online Video, and Viral Marketing to Reach Buyers Directly", Wiley4th Edition, Jan 2010*
- *Karunakaran, K..Marketing Management. New Delhi: Himalaya Publishing House. 3rd edition, 2013*
- *Kumar, A., Meenakshi. Marketing Management. New Delhi: Vikas Publishing HousePvt Ltd., 2nd edition,2013*

  Ramaswamy, V. S., Namakumari, S. Marketing Management Global Perspective,Indian Context. New Delhi: Macmillan India Limited. 3rd edition, 2009

MBA_BA II SEMESTER OPERATIONS AND SUPPLY CHAIN MANAGEMENT PAPER CODE: MBA_BA –202	Max. Marks: 100 Min. Marks: 35 External: 60 Internal: 40

OPERATIONS AND SUPPLY CHAIN MANAGEMENT

Course Objectives:

The students learn the nuances of forecasting, facility design, location, inventory, aggregate planning; students will also learn elements of supply chain, network design & logistics management, purchasing & vendor management.

Course outcomes: On completion of the course, the students will be able to:

CO-1 Learn the general concepts of operations, plant location Layout planning and concepts of supply chain.

CO-2 Understand the concepts of forecasting and concepts of Production planning and Capacity planning.

CO-3 Demonstrate the concepts of Aggregate planning and concepts of Inventory management.

CO-4 Analyze the Network Design, Logistics Management of a firm and Purchasing & Vendor Management.

CO-5 Understand the recent issues in supply chain management and role of IT in supply chain.

CO/PO MATRIX					
COS	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**
CO1	3	4	3	4	4
CO2	3	3	3	4	3
CO3	3	3	4	4	4
CO4	4	4	3	3	3
CO5	3	3	2	2	3

Unit 1: Introduction

An overview, Definition of operations management, Responsibilities of Operations Manager, Plant Location, Process selection and design, Layout Planning.

Basic Concepts, Objectives, Essential Features and Benefits of Supply Chain, Evolution of SCM, Various Flows (Cash, Value and Information), Key Issues in SCM.

Numerical problems on deciding plant location through Centroid Method.

Unit 2: Forecasting

Forecasting as a planning tool, Forecasting types and methods (Qualitative and Quantitative).

Capacity Planning

Production Planning techniques, Capacity management, Line of balance, scheduling types and principles. Numerical problems on Quantitative methods of Forecasting and system capacity & system efficiency.

Unit 3: Aggregate Planning

Introduction of Aggregate Planning, Techniques for Aggregate Planning, Aggregate Planning in Services, Disaggregating the aggregate plan.

Inventory Management

Inventory Management- Objective, Nature and Importance of Inventories, Requirements for effective Inventories, Inventory Ordering Policies, Inventory control techniques- ABC, VED, EOQ, SED, FSN Analysis. Numerical problems on Inventory control techniques.

Unit 4: Network Design and Logistics Management

The role of Network Design in the Supply Chain, Factors influencing Network Design Decisions, Logistics as part of SCM, Logistics Costs, Different Models, Logistics Sub- System, Inbound and Outbound Logistics, Bullwhip Effect in Logistics, Distribution and Warehousing Management.

Purchasing and Vendor Management

Centralized and Decentralized Purchasing, Functions of Purchase Department and Purchase Policies, Single Vendor Concept, Management of Stores, Accounting for Materials.

Practical - Use of Mathematical Model for Vendor Rating / Evaluation.

Unit 5: Recent Issues in SCM

Role of Computer/ IT in Supply Chain Management, The Supply Chain IT Framework, Customer Relationship Management, Internal Supply Chain Management, Supplier Relationship Management, The Transaction Management Foundation, The Future of IT in the Supply Chain, Risk Management in IT, Supply Chain IT in Practice.

Suggested Readings:

- *Stevenson, W. J. (2018). Operations Management, 12th Ed. McGraw Hill Education.*
- *Krajewski, L. J., Ritzman, L. P., Malhotra, M. K. and Srivastava, S. K. (2011). Operations Management: Processes and Supply Chains, 9th Ed. Pearson.*
- *Chase, R. B., Jacobs, F. R., Aquilano, N. J. (2003). Operations Management for Competitive Advantage, 10th Ed. Tata McGraw Hill.*
- *Mahadevan, B. (2010). Operations Management: Theory and Practice, 2nd Ed. Pearson.*
- *Chary, S. N. (2009). Production & Operations Management, 4th Ed., Tata McGraw Hill.*
- *Chopra, S., Meindl, P. (2007). Supply Chain Management: Strategy, Planning & Operation, 3rd Ed. PHI.*
- *Chopra, S., Meindl, P., Kalra, D.V. (2013). Supply Chain Management: Strategy, Planning and Operation, 5th Ed. Pearson.*
- *Reghuram G. (I.I.M.A.). Logistics and Supply Chain Management, 1st Edition.*
- *Krishnan Dr. G. Material Management, 5th Edition, Pearson.*
- *Agarwal D.K.A Text Book of Logistics and Supply Chain Management, 1st Edition Macmillan.*
- *Sahay B.S. Supply Chain Management, 1st Edition Macmillan.*

MBA_BA II SEMESTER **CORPORATE FINANCE** **PAPER CODE: MBA_BA –203**	**Max. Marks: 100** **Min. Marks: 35** **External : 60** **Internal: 40**

MBA_BA –203 CORPORATE FINANCE

Learning Objective:

This course is intended to introduce the basic theory, concepts, and practical applications in corporate finance and to enable students to analyze various corporate decisions.

Course Outcomes: Upon completion of this course, the students will be

CO-1: Understanding the fundamentals, various models and agency problems of Corporate Finance.
CO-2: Familiarizing with about practical aspects of corporate finance.
CO-3: Acquiring knowledge about various techniques used for analyzing various long-term projects.
CO-4: Analyzing the various capital structure techniques and selecting the best source of finance.
CO-5: Evaluating of various dividend models and its applicability.
CO-6: Gaining Acquaintance of students about corporate valuation in mergers and acquisitions.

CO/PO MATRIX					
Course-Outcome	**PO1:** Apply knowledge of management theories and practices to solve business problems	**PO2:** Foster analytical and critical thinking abilities for data-based decision making	**PO3:** Imbibe value based leadership ability for decision making	**PO4:** Inculcate the capability to understand, analyze and communicate global, economic, legal, and ethical aspects of business	**PO5:** Equipped them with soft & hard skills and to make them industry ready.
CO1	**3**	**3**	**2**	**3**	**3**
CO2	**3**	**3**	**2**	**1**	**1**
CO3	**3**	**3**	**1**	**1**	**1**
CO4	**3**	**3**	**3**	**2**	**2**
CO5	**3**	**3**	**3**	**2**	**1**
CO6	**3**	**3**	**3**	**2**	**2**

Unit 1: Introduction to Finance & Corporate Finance: Corporate Finance, objectives& its scope, Corporate Governance and Agency Problem, Time Value of Money: Present and future value of single payments, annuities, annuities due, and perpetuities - Growth in annuities and perpetuities - Compound interest and continuous compounding - Annual percentage rates and effective annual rates - Mathematics of loans: Discount, Interest only, Full and partial amortization.

Unit 2: Investment Decision: Concept of Opportunity Cost, Cost of Debenture, Preference and Equity capital, Composite Cost of Capital, Capital Budgeting Decisions, Calculation of NPV and IRR, Case Study.

Unit 3: Financial Decision: Capital Structure, Capital Structure Theories: Relevance and Irrelevance theory, Leverage analysis – financial, operating and combined leverage along with its implications, EBIT- EPS Analysis, Point of Indifference.

Unit 4: Dividend Decisions: Dividend Policy, Factors affecting Dividend Policy, Forms of Dividends, Types of Dividend Policies, Dividend Models: Walter and Gordon Model, Miller-Modigliani (MM) Hypothesis.

Unit 5: Overview of Working Capital Decision: Concept, Components, Factor Affecting working Capital Requirement, working Capital Management: Management of Cash, Inventory and Receivables

Suggested Readings

- *Graham, J. R., and Harvey, C. R. (2001). The theory and practice of corporate finance: Evidence from the field. Journal of financial economics, 60(2), 187-243. http://publicsde.regieenergie.qc.ca/projets/72/DocPrj/R-3807-2012-C-ACIG-0059-DDR-REPDDR-2012_12_20.pdf*
- *Stulz, R. (1996). Rethinking risk management. Journal of applied corporate finance, 9, 8-25. http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.200.9948&rep=rep1&type=pdf*
- *Subrahmanyam, A. (2008) Behavioural Finance: A review and synthesis http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.127.9964&rep=rep1&type=pdf*
- *Berenson, A. (2004) The Number: How America's Balance Sheet Lies Rocked the World's Financial Markets. http://www.amazon.co.uk/Number-Americas-Balance-FinancialMarkets/dp/0743468090/ref=asap_bc?ie=UTF8*

Text Books

- *Khan and Jain - Financial Management (Tata McGraw Hill, 7th Ed.)*
- *Pandey I M - Financial Management (Vikas, 11th Ed.)*
- *William Hakka Bettner Carcello- Financial and Management Accounting (TMH-16th Ed.)*
- *Sheebakapil-Fundamental of financial management (Wiley,2015)*
- *Prasanna Chandra - Fundamentals of Financial Management (TMH, 9th Ed.)*
- *Bark Demazo Thampy- Financial Management (Pearson,2nd Ed.)*
- *R P Rustagi - Financial Management (Galgotia, 2000, 2nd revised ed.)*
- *Damodaran, A., Applied Corporate Finance, 3rd Edition, Wiley, 2012*
- *Ravi.M Kishore – Financial Management (Taxman, 7th Ed)*
- *Fundamentals to Financial Management, Brigham & Houston, 14/e, Cengage Learning*
- Van Horne - Financial Management and Policy (Prentice hall, 2003, 12th Ed.)
- Brealey, R., Myers, S. and Allen, F. (2019), Principles of Corporate Finance, McGraw-Hill

MBA_BA II SEMESTER MACHINE LEARNING& APPLICATIONS PAPER CODE: MBA_BA –204	Max. Marks: 100 Min. Marks: 35 External : 60 Internal: 40

MACHINE LEARNING& APPLICATIONS

Course Objectives: The objective of the course is to learn what machine learning is and how it is related to data analysis and statistics. The course will impart knowledge on how various machine learning algorithms search for data patterns which can be used to make decisions and predictions for practical problem solving.

Course Outcomes: Students will be able to:

CO 1. Gain knowledge about basic concepts of Machine Learning
CO 2. Identify machine learning techniques suitable for a given problem
CO 3. Understand how to evaluate models generated from data.
CO 4. Apply the algorithms to a real-world problem, optimize the models learned and report on the expected accuracy that can be achieved by applying the models.
CO 5. Design application using machine learning techniques.

CO/PO MATRIX						
Course Outcomes	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**
CO1	**3**	**3**	**2**	**2**	**3**	**2**
CO2	**3**	**3**	**3**	**2**	**1**	**1**
CO3	**3**	**3**	**3**	**2**	**1**	**2**
CO4	**2**	**3**	**3**	**3**	**1**	**2**
CO5	**2**	**2**	**2**	**2**	**1**	**1**
AVERAGE	**2.6**	**2.8**	**2.6**	**2.16**	**2.2**	**1.6**

Unit 1: **Introduction to Machine Learning:** Learning Issues, designing a learning system, perspectives & issues in machine learning, concept learning and general to specific ordering. Overview of different tasks: classification, regression, clustering.

Unit 2: Categorization of Machine Learning Techniques Categories of machine learning techniques with brief introduction of each category: Decision trees, Bayesian learners, Ensemble learners, neural networks, support vector machines, rule-based learning, search-based techniques.

Unit 3: **Decision Trees and Artificial Neural Networks Decision Trees:** Introduction, Tree representation, Appropriate problems, Hypothesis space search, inductive bias, issues. Artificial Neural Networks: Introduction, Network representation, appropriate problems, perceptions, back-propagation.

Unit 4: **Bayesian Learners Bayesian learners:** Introduction, Bayes theorem and concept learning, maximum likelihood and least-squared error hypothesis, maximum likelihood hypothesis for predicting probabilities, minimum description length principle.

Unit 5: Unsupervised Learning Introduction, Clustering & Association, k-nearest neighbor learning, Apriori algorithm for association rule learning problems.

Text books:

- *Mitchell, T. (2013), Machine Learning, McGraw Hill.* • *Malhotra, R. (2016).*

Suggested Readings

- *I.H. Witten & E. Frank (2005), Data Mining: Practical Machine Learning Tools & Techniques, Elsevier, Second Edition.*
- *Murphy, K.P. (2012), Machine Learning: A probabilistic perspective, MIT Press.*
- *Mohri, M., Rostamizadeh, A. and Talwalkar, A. (2012), Foundations of Machine Learning, MIT Press.*
- *Harrington, P. (2012), Machine Learning in Action, Dreamtech Press. Suggested Reading*
- *Bell, J. (2014), Machine Learning for Big Data: Hands-On for Developers and Technical Professionals, Wiley.*
- *Haykin, S. (2016), Neural Networks and learning Machines, Pearso*

MBA_BA II SEMESTER **HUMAN RESOURCE MANAGEMENT** **PAPER CODE: MBA_BA –205**	**Max. Marks: 100** **Min. Marks: 35** **External : 60** **Internal : 40**

Credit: 4

HUMAN RESOURCE MANAGEMENT

Course Objective:

- To enable the students to understand HR Management system at various levels in industries or organizations.
- To enable them to integrate the understanding of various HR concepts along with the domain concept in order to take correct business decisions

Course Outcomes: On completion of the course, the students will be able to:

CO1: Develop an understanding of the concepts of HRM and essential skill sets required to become HR professional.
CO2: Contribute to the implementation and evaluation of plans related to employee recruitment, selection, training, retention, and appraisal processes in an organization.
CO3: Integrate the knowledge of HR concepts to take the best managerial decisions.
CO4: Design rationally the salary and compensation structure.
CO5: Create pay slip, offer letter, develop and use HR Metrics and write Job Advertisements.

CO/PO MATRIX						
Course Outcomes	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**
CO1	**3**	**3**	**2**	**2**	**3**	**2**
CO2	**3**	**3**	**3**	**2**	**1**	**1**
CO3	**3**	**3**	**3**	**2**	**1**	**2**
CO4	**2**	**3**	**3**	**3**	**1**	**2**
CO5	**2**	**2**	**2**	**2**	**1**	**1**
AVERAGE	**2.6**	**2.8**	**2.6**	**2.16**	**2.2**	**1.6**

Unit 1: **The Dynamic Environment of HRM:** Introduction, Functions, Scope and Significance of HRM; Human Capital in Organizations; Managing Human Resources in Organizations; HR Management Roles, Evolution of HRM, HR Management Competencies and Careers

Unit 2: **Manpower Acquisition:** HR planning, Job Analysis- Nature, Methods and approaches, Job Description, Job Specification, Job Evaluation, Recruitment-Types and Sources, Selection – Process and Techniques, Role of Technology in recruitment & Selection
Training – Concept, training process, techniques

Unit 3: **Establishing the Performance Management System:** Introduction; Purpose; Appraisals Process, Appraisals Methods, Tools for measuring employee performance
Internal Mobility and Separation of Employees Transfer, Promotion and Separation of employees
Employee welfare: A brief introduction

Unit 4: **Employee Absenteeism:** Types of Absenteeism, Controlling Absenteeism;
Employee Turnover: Concept and Types of Employee Turnover
Compensation Management - Components of Pay
Contemporary issues in HRM- HR Audit, HRIS, SHRM, IHRM - A Brief Introduction.

Unit 5: **Practical component:** Writing a job advertisement. Self Appraisal & Peer Appraisal
Offer Letter & Pay Slips

Ask students to collect manpower data of your institute and prepare HR Dashboards.

Suggested Readings:

- *Decenzo, D. A., & Robbins, S. P. (2010). Fundamentals of Human Resource Management. John Wiley &Sons, Inc.*
- *Mathis, R. L., & Jackson, J. H. (2008). Human Resource Management. Thomson South Western.*
- *Rao, P. (2014). Essentials of Human Resource Management and Industrial Relations. Himalaya Publishing House.*

MBA_BA II SEMESTER **DECISION SCIENCE** **PAPER CODE: MBA_BA –206**	**Max. Marks:100** **Min. Marks: 35** **External: 60** **Internal: 40**

MBA (BA) –206 DECISION SCIENCE

Course Objective: The course aims in providing the students with a comprehensive study of various application areas of decision science through relevant examples. The main objective is to provide necessary mathematical support and confidence to the students to tackle real life problems.

Course Outcomes: On successful completion of the course, students will be able to

CO-1. Know and understand the various techniques of Decision Science.
CO-2. Apply LP technique to translate a real-world problem, given in words, into a mathematical formulation.
CO-3. Sketch graphical representation and classify two-dimensional linear programming model.
CO-4. Evaluate cost of transporting, jobs assignment, job scheduling, replacement of equipment and project completion time.
CO-5. Understand and quantify variations in statistical quality control.

CO/PO MATRIX					
Course Outcomes	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**
CO1	3	2	2	3	3
CO2	3	3	2	3	3
CO3	3	3	2	3	3
CO4	2	3	2	3	3
CO5	3	3	3	3	3
Average	**2.8**	**2.8**	**2.2**	**3**	**3**

Unit 1 **Operations Research: Uses, Scope and Applications of operations research in managerial decision making.** Decision Making Environment: **Decision making under certainty; Uncertainty and Risk situations; Decision tree approach and its applications.**

Unit 2 **Linear Programming:**

Mathematical formulations of LP models for Product-Mix problem; Graphical and Simplex methods of solving LP problem; Duality. **Transportation Problem:** Various methods of finding initial basic feasible solution: NWCR, LCM and VAM, Optimal solution: MODI method. **Assignment Model:** Algorithm and its applications.

Unit 3 **Game Theory:**

Concepts of game, Two- person Zero-sum game; Pure and Mixed strategy game; Saddle point; Dominance method, Odds method and Graphical method for solving Mixed Strategy game. **Sequencing Problem:** Johnsons algorithm for n jobs and two machines; n jobs and three machines; two jobs and m- machines Problems.

Unit 4 **Queuing Theory:**

Characteristics of M/M/1 Queue model, Application of Poisson and Exponential distribution in estimating arrival rate and service rate. **Statistical Quality Control:** Meaning; Benefits of SQC; Control chart for variable mean chart, R- chart; Control chart for attributes: c-chart, np-chart, p-chart.

Unit 5 **Replacement problem:**

Replacement of assets that deteriorate with time**,** replacement of assets which fail suddenly. **Project Management**: Rules for drawing the network diagram; Applications of CPM and PERT techniques in Project planning and control.

Suggested Readings:

- *Hillier, F. S., & Lieberman, G. J. (2017). Introduction to Operation Research. McGraw Hills.*
- *Kapoor, V. K. (2013). Operations Research: Quantitative Techniques for Management. Sultan Chand & Sons.*
- *Taha, H. A. (2017). Operations Research: An Introduction. Pearson education.*
- *Vohra, N.D. (2017). Quantitative Techniques in Management. McGraw Hills.*
- *Gupta, P.K. & Hira, D.S. (2012). Introduction to Operations Research. S. Chand & Co.*
- *Sharma, J.K. Operations Research. Pearson education.*

MBA_BA II SEMESTER **MACHINE LEARNING USING R** **PAPER CODE: MBA_BA –207**	**Max. Marks: 50** **Min. Marks: 18** **External : 0** **Internal:50**

MACHINE LEARNING USING R (Practical)

Course Objectives: The objective of the course is to learn applications of various machine learning concepts using R language. The course would enable the ability to understand and critically assess available data using machine learning methods.

Course Outcomes: Students will be able to:

CO1: Understand the basics and use of R programming in terms of constructs, control statements, string functions.

CO2: Learn to apply R programming for various application areas

CO3: Able to appreciate and apply the R programming from a statistical perspective

Unit 1: R Basics and Language

Getting and Installing R, The R user Interface, A short R tutorial, R packages. Overview: Expressions, Objects, Symbols, Functions. Syntax: Constants, Operators, Expressions, Control Structures, Accessing Data Structures. R Objects: Primitive object types, vectors, lists, other object types. Symbols and Environment: Symbols, Global environment, environment and functions, exceptions.

Unit 2: Functions and Object Oriented Programming Functions:

Arguments, Return values, Function as arguments, side effects. Object Oriented Programming: Overview, Defining Classes, new objects, accessing slots, working with objects, creating coercion methods, methods, basic classes. High performance R with built in math functions, lookup tables etc.

Unit 3: Working with Data

Entering Data Within R, Entering Data Using R Commands, Using the Edit GUI, Saving and Loading R Objects, Importing Data from External Files, Exporting and Importing Data from Databases. Preparing Data: Combining Data Sets, Transformations, Binning Data, Subsets, Summarizing Functions, Data Cleaning, An overview of R graphics.

Unit 4: Statistics with R

Analyzing Data: Summary Statistics, Correlation and Covariance, Principal Components Analysis, Factor Analysis, Bootstrap Resampling. Probability Distributions: Normal Distribution, Common Distribution-Type Arguments, Distribution Function Families. Statistical Tests for Continuous and Discrete Data, Power Tests: Experimental Design

Unit 5: Regression Analysis

Regression Models: A Simple Linear Model, Fitting a Model, Refining the Model, Details About the lm Function, Assumptions of Least Squares Regression, Subset Selection and Shrinkage Methods, Stepwise Variable Selection, Ridge Regression, Lasso and Least Angle Regression. Principal Components Regression and Partial Least Squares Regression. Implementation of Machine Learning models using R.

Textbooks:

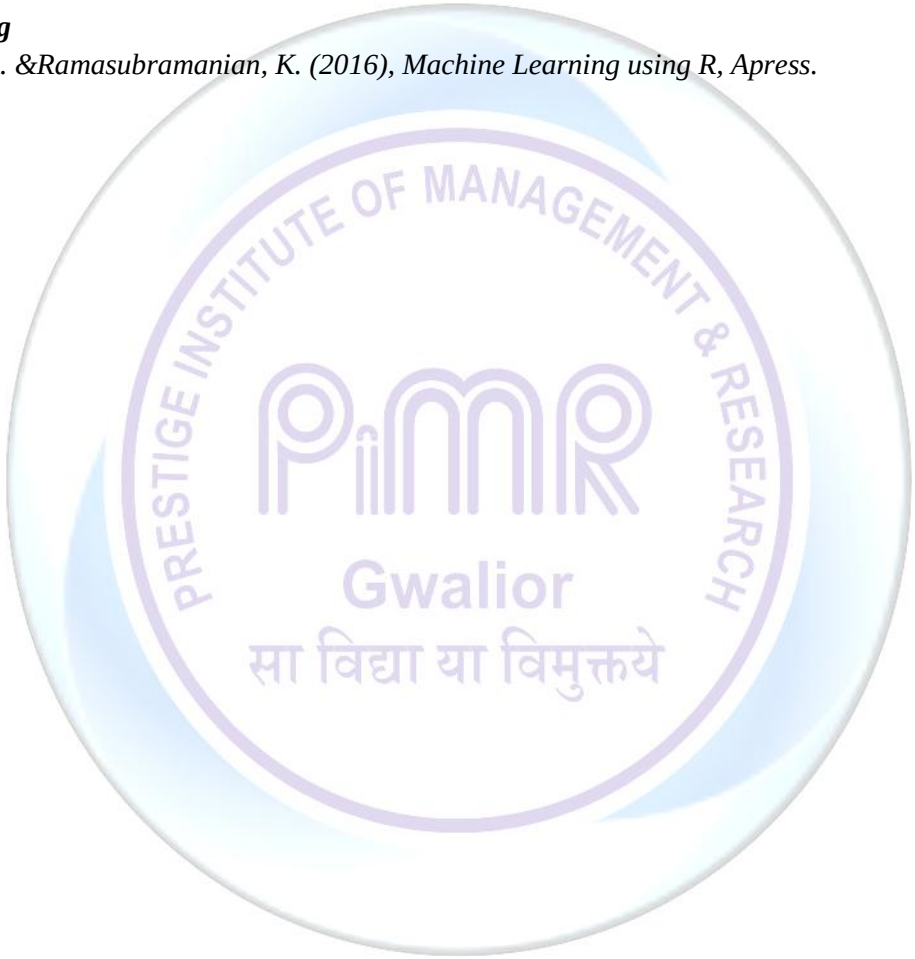
- *Adler, J. (2012), R in a Nutshell: A Desktop Quick Reference, O'reilly publications, Second Edition.*
- *Lantz, B. (2013), Machine Learning with R, Packt publishing Ltd.*

Reference Books

- *Lesmeister, C. (2015), Mastering Machine Learning with R, Packt Publishing, First Edition.*
- *Wickham, H. &Grolemund, G. (2016), R for Data Science: Import, Tidy, Transform, Visualize, and Model Data, O. Reilly Media.*
- *Gillespie, C., Lovelace, R. (2016), R for Data Science: Import, Tidy, Transform, Visualize, and Model Data, O'Reilly Media.*
- *StrickLand, J.S., Predictive analytics using R, Lulu Inc.*

Suggested Reading

- *Singh, A. &Ramasubramanian, K. (2016), Machine Learning using R, Apress.*



MBA_BA II SEMESTER DATABASE & SQL LAB PAPER CODE: MBA_BA –208	Max. Marks: 50 Min. Marks: 18 External :0 Internal: 50

DATABASE AND SQL LAB

Course Objectives:

This course has theory and practical lab session to provide a foundation in data management concepts and database systems. It includes representing information with the relational database model, manipulating data with an interactive query language (SQL) and database programming, database development including internet applications, and database security, integrity and privacy issues.

Learning Outcomes: After completion of this course student will be able to

CO 1. Understand the concept of Database Management System and ER-Model
CO 2. Understand relational databases using Oracle/MS-Access/MySql.
CO 3. Understand and apply basic concepts of Select statement in Structured Query Language (SQL)
CO4. Apply the Structured Query Language (SQL) to extract and derived desired data.
CO 5. Understand and apply joins to retrieve data from multiple tables. Understand and apply nested Select statement.

CO/PO MATRIX						
Course Outcomes	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**
CO1	**3**	**3**	**2**	**2**	**1**	**3**
CO2	**2**	**3**	**2**	**3**	**1**	**3**
CO3	**3**	**3**	**2**	**2**	**1**	**3**
CO4	**3**	**3**	**2**	**3**	**2**	**3**
CO5	**3**	**3**	**3**	**3**	**1**	**3**
AVERAGE	**2.8**	**3**	**2.2**	**2.6**	**1.2**	**3**

Unit 1: Introduction to database and data models

Database: Definition, purpose of database system, various view of data; database architecture: View/Schema, Logical-view, conceptual-view, physical-view and their interrelationship, transaction management; Data Models: The importance of data models, Basic building blocks, Business rules, The evolution of data models, Degrees of data abstraction.

Unit 2: Database Design, ER-Diagram and Normalization:

Database design and ER Model: overview, ER-Model, Constraints, ER-Diagrams, ERD Issues, weak entity sets, Codd's rules, Relational Schemas: Logical view of data, keys, integrity rules. Relational Database design: features of good relational database design, atomic domain and Normalization (1NF, 2NF, 3NF).

Unit 3: SQL Basics

SQL Data Types, Basic SELECT Statement, Selecting All Columns, Selecting Specific Columns, Writing SQL Statements, Column Heading Defaults, Arithmetic Expressions, Using Arithmetic Operators, Operator Precedence, Using Parentheses, Defining a Null Value, Null Values in Arithmetic Expressions, Defining a Column Alias, Using Column Aliases, Concatenation Operator, Using the Concatenation Operator, Literal Character Strings, Using Literal Character Strings, Duplicate Rows, Eliminating Duplicate Rows

Unit 4: Restricting and Sorting Data, SQL Function

Limiting Rows Using a Selection, Limiting the Rows Selected, Using the WHERE Clause, Character Strings and Dates, Comparison Conditions, Using Comparison Conditions, Other Comparison Conditions, Using the BETWEEN Condition, Using the IN Condition, Using the LIKE Condition, Using the NULL Conditions, Logical Conditions, Using the AND Operator, Using the OR Operator, Using the NOT Operator, Rules of Precedence, ORDER BY Clause, Sorting in Descending Order, Sorting by Column Alias, Sorting by Multiple Columns; **SQL Function:** Character Functions, Case Manipulation Functions, Number Functions, Date Functions, Conversion Functions, Elements of the Date Format Model, Using the TO_CHAR Function with Dates

Unit 5: Displaying Data from Multiple Tables, Aggregate Function, sub-queries

Obtaining Data from Multiple Tables: Cartesian Product, Equijoin, Non-Equijoins, Natural Joins, Cross Join, inner join, outer join, left outer join, right outer join, Full outer Join; **Aggregate Function:** Group Function, Group function with null values, group by clause, Having Clause; **Sub-queries:** Single row sub-queries, multiple row sub query, group function and having clause in sub-query, handling null values in sub queries.

- Basics of Relational Model and integrity Constraints
- Data Retrieval from Single Table, Data retrieval with condition
- SQL Function
- Data retrieval from multiple table
- Sub query

MBA_BA III SEMESTER BIG DATA ANALYTICS PAPER CODE: MBA-BA –301	Max. Marks: 100 Min. Marks: 35 External :60 Internal: 40

BIG DATA ANALYTICS

COURSE OBJECTIVES:

- Understand the Big Data Platform and its Uses
- Provide an overview of Apache Hadoop
- Provide Concepts and Interfacing with HDFS (Hadoop Distributed File System)
- Provide Basics understanding of Map Reduce and its applicability
- Provide Basics understanding of Hadoop Eco System

OUTCOMES: The students will be able to:

CO1: Identify Big Data and its Business Implications.
CO2: List the components of Hadoop and Hadoop Eco-System
CO3: Access and Process Data on Distributed File System
CO4: Manage Job Execution in Hadoop Environment
CO5: Develop Big Data Solutions using Hadoop Eco System

CO/PO MATRIX						
Course Outcomes	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**
CO1	**3**	**2**	**1**	**2**	**1**	**2**
CO2	**3**	**3**	**3**	**2**	**2**	**1**
CO3	**3**	**3**	**3**	**2**	**2**	**2**
CO4	**3**	**3**	**2**	**3**	**2**	**2**
CO5	**2**	**2**	**3**	**2**	**2**	**1**
AVERAGE	**2.8**	**2.6**	**2.4**	**2.2**	**1.8**	**1.6**

Unit 1: INTRODUCTION TO BIG DATA Analytics

Introduction to big data Analytics, Big Data Platform, Challenges of Conventional Systems - Intelligent data analysis, Nature of Data, Analytic Processes and Tools, Analysis vs Reporting

Unit 2: Introduction to Hadoop

Basics of Hadoop, History of Hadoop, Architecture of Hadoop, Apache Hadoop, Analyzing Data with Hadoop, Hadoop Streaming, Introduction to Hadoop Echo System

Unit 3: HDFS (Hadoop Distributed File System)

The Design of HDFS, HDFS Concepts, Command Line Interface, Hadoop file system interfaces, Data flow, Data Ingest with Flume and Scoop and Hadoop archives, Hadoop I/O: Compression, Serialization, Avro and File-Based Data structures.

Unit 4: Map Reduce

Anatomy of a Map Reduce Job Run, Failures, Job Scheduling, Shuffle and Sort, Task Execution, Map Reduce Types and Formats, Map Reduce Features.

Unit 5: Spark

Relationship between Apache Spark and Hadoop Ecosystem, Apache Spark Architecture and how it works, development life-cycle of Apache Spark Applications, Apache Spark use-cases and advanced characteristics

Text Books

- *Tom White "Hadoop: The Definitive Guide" 4th edition, O'reily Media, 2012.*
- *Seema Acharya, SubhasiniChellappan, "Big Data Analytics" Wiley 2015*

Suggested Readings

- *Michael Berthold, David J. Hand, "Intelligent Data Analysis", Springer, 2007.*
- *Jay Liebowitz, "Big Data and Business Analytics" Auerbach Publications, CRC press (2013)*
- *Tom Plunkett, Mark Hornick, "Using R to Unlock the Value of Big Data: Big Data Analytics with Oracle R Enterprise and Oracle R Connector for Hadoop", McGraw-Hill/Osborne Media (2013), Oracle press.*

MBA(BA) III SEMESTER **Multivariate Data Analysis** **PAPER CODE: MBA(BA)-302**	**Max. Marks:100** **Min. Marks: 35** **External: 60** **Internal: 40**

MBA (BA) - 302 Multivariate Data Analysis

Course Objective: The course emphasis on problem based learning focusing on the application of data analysis techniques for addressing the research questions at the heart of their own research projects. Describe the data analysis using the advanced statistical techniques..

Course Outcomes: On successful completion of the course, students will be able to

CO-1. Understand appropriate and relevant fundamental of research.
CO-2. Describe the essential features of data preparation.
CO-3. Demonstrate and describe the multivariate methods.
CO-4. Demonstrate the regression methods.
CO-5. Analyze and interpret the data using the multivariate techniques.

CO/PO MATRIX					
Course Outcomes	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**
CO1	3	3	3	2	3
CO2	3	3	3	3	3
CO3	3	3	2	3	3
CO4	2	3	2	3	3
CO5	3	3	3	2	3
Average	**2.8**	**3**	**2.6**	**2.6**	**3**

Course Contents:

Unit 1: Conceptual Foundations of Research: Meaning of research and scope of methodology, Identification of problem area, Formulation of research questions, Typology of Research Designs. Overview of quantitative research, conceptual framework in quantitative research. Introduction to academic writing, structure of academic writing.

Unit 2: Sampling Design and Measurement Tools: Sampling: Process and Types: probability and non probability sampling. Scaling techniques meaning, types of scales–Hypothesis testing Statistical significance, statistical test procedure. Validity: Internal and external validity, Reliability: Factors influencing reliability.

Unit 3: Data Preparation and Analysis: Data Preparation: editing, coding, data entry. Test of significance: assumptions about parametric and nonparametric tests. Application of statistical software for data analysis.

Unit 4: Predictive Analysis: Simple linear regression: Coefficient of determination, Significance tests, Residual analysis, Confidence and Prediction intervals. Multiple linear regressions: Coefficient of multiple coefficient of determination, Interpretation of regression coefficients, heteroscedasticity, multi-collinearity, outliers.

Unit 5: Multivariate Designs and Analysis: Introduction to Multivariate methods and analysis: Discriminant Analysis, Factor analysis, Structural equation modelling (SEM), Meta analysis, Mediational Analysis, Canonical Analysis.

Suggested Readings:

- *Cooper, D. R., Schindler, P. S., & Sun, J. (2006). Business research methods. New York: Mcgraw-hill.*
- *Bell, E., Bryman, A., & Harley, B. (2018). Business research methods. Oxford university press.*
- *Zikmund, W. G., Carr, J. C., & Griffin, M. (2013). Business Research Methods. Cengage Learning.*
- *Sekaran, U., & Bougie, R. (2019). Research methods for business: A skill building approach. John wiley & sons.*

MBA_BA III SEMESTER PRACTICAL LAB ON BIG DATA PAPER CODE: MBA-BA –307	Max. Marks: 100 Min. Marks: 35 External :50 Internal: 50

PRACTICAL LAB ON BIG DATA

Objectives:

- Optimize business decisions and create competitive advantage with Big Data analytics
- Imparting the architectural concepts of Hadoop and introducing map reduce paradigm
- Introducing Java concepts required for developing map reduce programs
- Derive business benefit from unstructured data
- Developing Big Data applications for streaming data using Apache Spark

CO/PO MATRIX						
Course Outcomes	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**
CO1	**3**	**3**	**2**	**2**	**3**	**2**
CO2	**3**	**3**	**3**	**2**	**2**	**1**
CO3	**3**	**3**	**3**	**2**	**2**	**2**
CO4	**2**	**3**	**1**	**3**	**2**	**2**
CO5	**2**	**2**	**2**	**2**	**2**	**1**
CO6	**2**	**2**	**2**	**2**	**2**	**2**
AVERAGE	**2.5**	**2.6**	**2.16**	**2.16**	**2.16**	**1.66**

Lab Exercises:

1. (i) Perform setting up and Installing Hadoop in its two operating modes:
   - Pseudo distributed,
   - Fully distributed.

   (ii) Use web based tools to monitor your Hadoop setup.

2. (i) Implement the following file management tasks in Hadoop:
   - Adding files and directories
   - Retrieving files
   - Deleting files

   ii) Benchmark and stress test an Apache Hadoop cluster

3. Run a basic Word Count Map Reduce program to understand Map Reduce Paradigm.
   - Find the number of occurrence of each word appearing in the input file(s)
   - Performing a MapReduce Job for word search count (look for specific keywords in a file)

4. Stop word elimination problem:
   - Input:
     - A large textual file containing one sentence per line
     - A small file containing a set of stop words (One stop word per line)
   - Output:
     - A textual file containing the same sentences of the large input file without the words appearing in the small file.

5. Write a Map Reduce program that mines weather data. Weather sensors collecting data every hour at many locations across the globe gather large volume of log data, which is a good candidate for analysis with MapReduce, since it is semi structured and record-oriented. Data available at: https://github.com/tomwhite/hadoopbook/tree/master/input/ncdc/all.
   - Find average, max and min temperature for each year in NCDC data set?
   - Filter the readings of a set based on value of the measurement, Output the lineof input files associated with a temperature value greater than 30.0 and store itin a separate file.

6. Purchases.txt Dataset
   - Instead of breaking the sales down by store, give us a sales breakdown byproduct category across all of our stores
   - What is the value of total sales for the following categories?
     - Toys
     - Consumer Electronics
     - Find the monetary value for the highest individual sale for each separate store
   - What are the values for the following stores?
   - Reno
   - Toledo
   - Chandler

   Find the total sales value across all the stores, and the total number of sales.

7. Install and Run Pig then write Pig Latin scripts to sort, group, join, project, and filter your data.
8. Write a Pig Latin scripts for finding TF-IDF value for book dataset (A corpus of eBooksavailable at: Project Gutenberg)
9. Install and Run Hive then use Hive to create, alter, and drop databases, tables, views,functions, and indexes.
10. Install, Deploy & configure Apache Spark Cluster.

11. Data analytics using Apache Spark on Amazon food dataset, find all the pairs of itemsfrequently reviewed together.
    - Write a single Spark application that:
    - Transposes the original Amazon food dataset, obtaining a PairRDD of the type:
    - <user_id> → <list of the product_ids reviewed by user_id>
    - Counts the frequencies of all the pairs of products reviewed together;
    - Writes on the output folder all the pairs of products that appear more than onceand their frequencies. The pairs of products must be sorted by frequency.

Text Books

- *Tom White "Hadoop: The Definitive Guide" 4th edition, O'reily Media, 2012.*
- *Seema Acharya, SubhasiniChellappan, "Big Data Analytics" Wiley 2015*

Suggested Readings

- *Michael Berthold, David J. Hand, "Intelligent Data Analysis", Springer, 2007.*
- *Jay Liebowitz, "Big Data and Business Analytics" Auerbach Publications, CRC press (2013)*
- *Tom Plunkett, Mark Hornick, "Using R to Unlock the Value of Big Data: Big Data Analytics with Oracle R Enterprise and Oracle R Connector for Hadoop", McGraw-Hill/Osborne Media (2013), Oracle press.*

MBA_BA III SEMESTER DATA VISUALIZATION LAB PAPER CODE: MBA-BA –308	Max. Marks: 50 Min. Marks: 18 External :25 Internal: 25

DATA VISUALIZATION LAB

Course Objectives:
This course covers practical implementation of concepts regarding visualization tools and techniques using Python and Power BI.

Course Outcomes: On successful completion of the course, the students will be able to:
CO1: Understand practical concepts of data visualization & storage.
CO2: Demonstrate knowledge about Python libraries regarding Data Visualization.
CO3: Develop a practical understanding of Power BI.
CO4: Demonstrate practical approach in case studies of live data sets.

Unit 1 Introduction to Data Science with Python: The Stages of Data Science, Python Learning Resources, Python Environment and Editors, The Basics of Python Programming, Fundamental Python Programming Techniques: Types of statements, Exception Handling, String Processing, Tabular Data and Data Formats, Python Pandas Data Science Library, Python Lambdas and the Numpy Library, Data Cleaning and Manipulation Techniques, Abstraction of the Series and Data Frame.

Unit 2 Introducing Data Visualization Techniques: Loading Libraries, Popular Libraries for Data Visualization in Python, Introducing Plots in Python, Data Collection Structures: Lists, Dictionaries, Tuples, Series, Data Frames, File I/O Processing, Regular Expressions,

Unit 3 Data Gathering and Cleaning: Cleaning Data, Reading and Cleaning CSV Data, Merging and Integrating Data, Reading Data from the JSON Format, Reading Data from the HTML Format, Reading Data from the XML Format, Data Exploring and Analysis, Statistical Analysis, Data Grouping, Iterating Through Groups, Aggregations, Transformations, Filtration.

Unit 4 Data Visualization: Direct Plotting, Line Plot, Bar Plot, Pie Chart, Box Plot, Histogram Plot, Scatter Plot, Seaborn Plotting System, Strip Plot, Box Plot, Swarm Plot, Joint Plot, Matplotlib Plot,.

Unit 5 Case Studies: Data Gathering, Data Analysis, Data Visualization, Findings, Introduction to Power BI, Power BI Desktop Visualizations, Modeling with Power BI, Power BI Service, Practical hands on different datasets using Power BI.

Textbooks:

- *Dr. Ossama Embarak (ISBN-13 (pbk): 978-1-4842-4108-0), Data Analysis and Visualization Using Python.*
- *Python Data Visualization Essentials Guide Kalilur Rahman SKU: 9789391030070*

MBA_BA III SEMESTER **SUMMER TRAINING REPORT & PRESENTATION** **PAPER CODE: MBA-BA –309**	**Max. Marks: 100** **Min. Marks: 35** **External :50** **Internal: 50**

SUMMER TRAINING REPORT & PRESENTATION

The students will be doing upto forty five days summer internship program arranged by the institute in the different organizations after the completion of second semester of program. Students will be evaluated on the basis of their training report and subsequent presentation. The evaluation will be done by external and internal examiner.

MBA_BA IV SEMESTER **ENTREPRENEURSHIP AND SMALL BUSINESS DEVELOPMENT** **PAPER CODE: MBA-BA –401**	**Max. Marks: 100** **Min. Marks: 35** **External :60** **Internal: 40**

ENTREPRENEURSHIP AND SMALL BUSINESS DEVELOPMENT

Course Objective:
This course introduces the students to the basics of entrepreneurship and small business development and students gain an understanding of how to establish and manage a small business.

Course Outcomes: After the completion of the course, the students will be able to:

CO1: Develop the skills and qualities required to be a successful entrepreneur
CO2: Understand the theories of entrepreneurship and the challenges faced by women and rural entrepreneurs.
CO3: Learn how to start an enterprise and design business plans.
CO4: Analyze and compare the different funding agencies available for training and funding new enterprises.
CO5: Analyze and compare the different entrepreneurial agencies available for the growth of Entrepreneurship in India

Unit 1: Evolution and Concept of Entrepreneurship, Concept of Entrepreneur, Corporate Entrepreneurship, Characteristics of Successful Entrepreneurs, Entrepreneurship, Innovation, Invention, Creativity, Business Idea & Opportunities through change in Entrepreneurship, Entrepreneurship as a Career, Changing Role of the Entrepreneur.

Unit 2: Theories of Entrepreneurship: Innovation Theory by Schumpeter and Theory of High Achievement by Mcclelland. Role of Women Entrepreneurs, Challenges and Achievements of Women Entrepreneurs. Role and Challenges of Rural Entrepreneurs, and Scope of Small Business Activities in National Economy.

.**Unit 3:** Creating Entrepreneurial Venture- Opportunity / Identification and Product/Service Selection: Entrepreneurial Opportunity Search and Identification; Sources of Information; Criteria to Select a Product; Conducting Feasibility Studies; Marketing Feasibility, Technical Feasibility, Finance Feasibility, HR Feasibility etc; Business Plan Formulation; Format of Business Plan with Practical example; Project Report Preparation; Specimen of Project Report. Project Planning and Scheduling using Networking Techniques of PERT/CPM.

Unit 4: Entrepreneurship Training and Development Program, EDP & its Phases, Start-up Process: Development of Support System, Need of License, Capital Issues and Legal Environment of Business; Entrepreneurial Planning and Monitoring. Financial Schemes Offered by Various Financial Institutions Like Commercial Banks, IDBI, ICICI, SIDBI, SFCs, Venture Capital Funding, Angle Capitalist, Subsidies, Grants etc.

Unit 5: Role of the following Agencies in the Entrepreneurship Development DIC- District Industrial Center, SISI – Small Industry Service Institute, EDII – Entrepreneurship Development Institute of India, NIESBUD – National Institute of Entrepreneurship and Small Business Development, NSTEDB – National Science & Technology Entrepreneurship Development Board, NSIC - National Small Industries Corporation

Suggested Readings:

- David, H. (2002). *Entrepreneurship: New venture Creation.* India: Prentice Hall.
- Desai, V. (2018). *Dynamics of Entrepreneurship Development* (6th edition), Mumbai: Himalaya Publishing House.
- Dollinger, M. (2007). *Entrepreneurship: Strategies and Resources* (4th edition), Marsh Public.
- Nagarajan, K. (2010). *Project Management* (6th edition), New Age Internal Pvt. ltd.
- Taneja, S., & Gupta, S. (2017). *Entrepreneurship Development New Venture Creation* (2nd edition), Galgotia Publishing.

MBA_BA IV SEMESTER CYBER SECURITY & LAW PAPER CODE: MBA-BA –402	Max. Marks: 100 Min. Marks: 35 External :60 Internal: 40

CYBER SECURITY & LAW

Course Outcomes: At the completion of the course, students would be able to:

CO1: Create a cyber security law program applicable to any public or private organization
CO2: Understand the basic elements of criminal law in context of cyber security crime.
CO3: Understand the branches of law, jurisdictional boundaries and cyber security law enforcement.
CO4: Recommend a legal defense against data breaches or cybercrime civil or criminal proceedings.

Unit 1: Computers and Cyber Security

Introduction to Computers, Classification, Computer Input-Output Devices, Computer Security Terms, Computer Ethics, Business and Professional Ethics, Need for cyber security; Cyber Frauds and crimes, Digital Payments, Various Search Engines.

Unit 2 Cyberspace

Introduction to Cyberspace, Regulation of cyber space – introducing cyber law, Scope of Cyber laws – e-commerce; online contracts, IPRs (copyright, trademarks and software patenting); e-taxation, e-governance and cyber crimes, Human rights in cyberspace, International Co-operation in investigating cybercrimes, Challenges to Fighting Cybercrime.

Unit 3 Cyber Laws

Need for Cyber Rules & Regulations; Scope and Significance of Cyber laws: Information Technology Act 2000; Amendments in IT Act, Network and Network Security, Access and Unauthorized Access, Data Security, E Contracts and E Forms. Penal Provisions for Phishing, Spam, Virus, Worms, Malware, Hacking, Trespass and Stalking

Unit 4 E- Commerce

Definition of E-commerce, Introduction to E-Commerce- UNCITRAL, Types of E-commerce, Important Issues in Global E-commerce, Electronic signatures – technical issues and legal issues, Electronic Contracts – E-Commerce Trends and Prospects, E-commerce and Taxation, E-commerce and Banking – Online Credit Card Payments, Ecommerce and Retailing – E-Commerce and Corporate finance.

Unit 5 Cyber security & Data Privacy Laws

Legal framework of Data Privacy, Need for Data Privacy Laws, Right to privacy under Indian Constitution, Data Privacy and Confidentiality.

Reference Books:

- *K.L. James, The Internet: A User's Guide, 2003, Prentice Hall of India, New Delhi.*
- *Brijendra Singh, Network Security and Management, Prentice Hall of India, New Delhi.*
- *Trevor Arden, GNVQ core Skills-Information Technology, 2nd Ed, 1995, Pitman Publishing, London.*
- *Kamlesh N. Agarwala&Murali D. Tiwari (Ed.) I.T. and Indian Legal System, Macmillan India Ltd. New Delhi*
- *T. Ramappa, Legal Issues in Electronics Commerce, Macmillan India Ltd, New Delhi;*
- *Indian Law Institute, Legal Dimensions of Cyber Space, New Delhi.*
- *Rodney Ryder, Guide to Cyber Law 2003, Pro Law Publications.*
- *Justice Yatindra Singh, Cyber Laws, Universal Law Publishing, UP, 2016.*
- *Farouq Ahmed, Cyber Law in India, Allahabad Law Agency, 2015*
- *Karnika Seth, Computers, Internet and New Technology Laws-A Comprehensive Reference Work With Special Focus On Developments In India, LexisNexis, Nagpur, 2016.*
- *Kamath Nandan: Law relating to Computer, Internet and E-Commerce, Universal Law Publishing, UP, 2007.*

MBA_BA IV SEMESTER **DISSERTATION REPORT &** **VIVA VOCE** **PAPER CODE: MBA-BA –406**	**Max. Marks: 200** **Min. Marks: 70** **External :100** **Internal: 100**

DISSERTATION REPORT & VIVA VOCE

Students will be doing one MRP project in the field of Management and IT. They need to prepare a dissertation report file with the help of assigned faculty guide. Students will be evaluated on the basis of Dissertation Report & Viva Voce by external and internal examiner.

MBA_BA IV SEMESTER PREDICTIVE ANALYTICS USING SPSS PAPER CODE: MBA-BA –407	Max. Marks: 200 Min. Marks: 70 External :100 Internal: 100

PREDICTIVE ANALYTICS USING SPSS

COURSE OUTCOMES: At the end of the course, the students will be able to:

CO1: Understand appropriate and relevant fundamental of research.
CO2: Demonstrate a capacity to employ a variety of research design.
CO3: Understand the Types of sampling
CO4: Determine the sample size.
CO5: Demonstrate the multivariate methods.
CO6: Analyze, and interpret the data using the multivariate.
CO7: Demonstrate the regression methods.
CO8: Predict the demand using the linear regression methods.
CO9: Describe the essential features of Logistic Regression.
CO10: Describe the essential features of Multinomial Regression.

COURSE OUTCOMES: The students will be able to:

- Understand the process of formulating business objectives, data selection/collection,
- Preparation and process to successfully design, build, evaluate and implement predictive models for a various business application.
- Compare the underlying predictive modeling techniques.
- Select appropriate predictive modeling approaches to identify cases to progress with.
- Apply predictive modeling approaches using a suitable package such as SPSS Modeler

Unit 1: Introduction to Analytics
Introduction to Analytics, Analytics in Decision Making, Game changers & Innovators, Predictive Analytics, Experts view on Analytics

Unit 2: Simple Linear Regression (SLR) &Multiple Linear Regression (MLR)
Case-let Overview, Introduction to Regression, Model Development, Model Validation, Multiple Linear Regression, Estimation of Regression Parameters, Model Diagnostics, Dummy, Derived & Interaction Variables, Multi-collinearity, Model Deployment, Demo using SPSS.

Unit 3: Logistic Regression
Discrete choice models, Logistic Regression, MLE Estimation of Parameters, Logistic Model Interpretation, Logistic Model Diagnostics, Logistic Model Deployment, Demo using SPSS.

Unit 4: Decision Trees and Unstructured Data Analysis
Introduction to Decision Trees, CHI-Square Automatic Interaction Detectors (CHAID), Classification and Regression Tree (CART), Analysis of Unstructured data, Naive Bayes algorithm, Demo using SPSS.

Unit 5: Forecasting and Time series Analysis
Forecasting, Time Series Analysis, Additive & Multiplicative models, Exponential smoothing techniques, Forecasting Accuracy, Auto-regressive and Moving average models, Demo using SPSS.

Reference Material

- *Abbott, D. (2014). Applied predictive analytics: Principles and techniques for the professional data analyst. John Wiley & Sons.*
- *Bradlow, E. T., Gangwar, M., Kopalle, P., &Voleti, S. (2017). The role of big data and predictive analytics in retailing. Journal of Retailing, 93(1), 79-95.*
- *Eckerson, W. W. (2007). Predictive analytics. Extending the Value of Your Data Warehousing Investment. TDWI Best Practices Report, 1, 1-36.*
- *Larose, D. T. (2015). Data mining and predictive analytics. John Wiley & Sons.*
- *Manuals of SPSS Modeler*
- *Manuals of SPSS Statistics*
- *Siegel, E. (2013). Predictive analytics: The power to predict who will click, buy, lie, or die. John Wiley & Sons.*

MBA_BA IV SEMESTER **MANDATORY NON CGPA ELECTIVE** **PAPER CODE: MBA-BA VAC**	**Max. Marks: 00** **Min. Marks: 00** **External :00** **Internal: 00**

CERTIFICATION COURSE FROM NPTEL/SWAYAM

Students must complete a certificate from NPTEL/ SWAYAM platform in the field of management and IT. The topic will be decided by the student himself. Student has to submit the proof of certificate completion to the institute.

Discipline Specific Electives (Choose any four from the group)

The student must choose two discipline specific electives in the III (third) and IV (fourth) semester each.

Code.	S. No.	Paper	Semester
DSEC-01	1	Social Media & Web Analytics	III
DSEC-02	2	Marketing Analytics	IV
DSEC-03	3	Financial Analytics	III
DSEC -04	4	HR Analytics	IV
DSEC -05	5	Retail Analytics	IV
DSEC -06	6	Data Management and Ethics	IV
DSEC -07	7	Digital Marketing Analytics	III
DSEC -08	8	Time Series Analysis	III

MBA_BA III SEMESTER SOCIAL MEDIA & WEB ANALYTICS PAPER CODE: DSEC-01	Max. Marks: 100 Min. Marks: 35 External :60 Internal: 40

SOCIAL MEDIA AND WEB ANALYTICS

Course Objectives:

The aim of the course is to understand the increasing world connectivity using social network analysis on varied scales which range from small functional groups to the ever expanding World Wide Web. It examines the creation of various networks be it technological, economic or social and how they affect our behavior and attitudes. The techniques to understand, design and measure various phenomenon a such as file-sharing websites, social networking sites, recommender systems, search-engines, social book marking and virtual worlds are focused.

Course Outcomes:

At the end of course student will be able to:
Learn models to interpret the structure of Web graph and its spread of information.
Perform social network analysis to understand and identify social media network properties, its actors and sub-groups.
Understand the concept of similarity and equivalence in social roles and positions.
Apply qualitative and quantitative methods for analyzing web traffic.

CO/PO MATRIX						
Course Outcomes	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**
CO1	**3**	**3**	**2**	**2**	**3**	**2**
CO2	**3**	**3**	**3**	**2**	**2**	**1**
CO3	**3**	**3**	**3**	**2**	**2**	**2**
CO4	**2**	**3**	**1**	**3**	**2**	**2**
CO5	**2**	**2**	**2**	**2**	**2**	**1**
CO6	**2**	**2**	**2**	**2**	**2**	**2**
AVERAGE	**2.5**	**2.6**	**2.16**	**2.16**	**2.16**	**1.66**

Unit 1: Introduction: Introduction: What's different about social network data? Nodes, Relations, Scales of measurement, statistics and social network data. Introduction to formal methods, efficiency, using computers, seeing patterns. Using graph store present social relations: Introduction, graphs and socio grams, kinds of graphs.

Unit 2: Web Analytics: World of web analytics, optimal strategy for choosing web analytics soul mate, Click stream analysis: metrics and practical solutions.

Unit 3: Connections: Making connections: Link analysis. Random graphs and network evolution. Social contexts: Affiliation an did entity. Connection: Search, collapse, robustness Social movements and diffusion of innovation.

Unit4: Ego Networks, Centrality and Power: Ego Networks: Introduction, Ego network data, ego network density, structural holes, brokerage. Centrality, centralization, and power: Introduction, Degree centrality, closeness centrality, betweenness centrality.
Embedding: Introduction, Density, Reciprocity, Transitivity, Clustering, Group-external and group-internalities, Krackhardt's graph theoretical dimensions of hierarchy.

Unit 5: Cliques and Sub groups: Positions and Roles, Cliques and groups: Introduction, Bottom up approaches, top down approaches. Homophile and social segregation.
Measures of Similarity and Structural, Auto morphic and Regular Equivalence
Equivalence: Positions and Social Roles. Introduction, measuring similarity/dissimilarity, visualizing similarity and distance, describing structural equivalence sets. Auto morphic Equivalence: Definition, uses of concept, finding equivalence sets. Regular equivalence: Definition, uses of concept, finding equivalence sets.

TextBooks

- *Hanneman, R.and Riddle, M.(2005).Introduction to Social Network Methods, Riverside.*
- *Kaushik A.(2009).Web Analytics2.0:The Art of Online Accountability, Wiley Publishing.*

Reference Books

- *Easley,D.& Kleinberg,J.(2010). Networks, Crowds, and Markets: Reasoning About a Highly Connected World, Cambridge University Press.*
- *Monge, P.R.& Contractor,N.S.(2003).Theories of communication networks, Oxford University Press, New York.*
- *Sponder, M.(2014), Social Media Analytics: Effective Tools for Building, Interpreting, and Using Metrics. Mc GrawHill.*

Suggested Reading

- *Clifton, B.(2012). Advanced Web Metrics with Google Analytics, John Wiley & Sons, Third edition.*
- *Ganis, M. & Kohirkar, A. (2015). Social Media Analytics: Techniques and Insights for Extracting Business value out of Social media, IBM Press, First Edition.*

MBA_BA IV SEMESTER MARKETING ANALYTICS PAPER CODE: DSEC-02	Max. Marks: 100 Min. Marks: 35 External :60 Internal: 40

ELECTIVE - MARKETING ANALYTICS

Course Objectives

- This course will provide students with an introduction to marketing analytics.
- The students will learn various tools for generating marketing insights from data in such areas as segmentation, targeting and positioning, satisfaction management, customer lifetime analysis, customer choice, product and price decisions using conjoint analysis, and text analysis and search analytics.

Unit 1: Introduction to marketing analytics, models and metrics, Market Insight: Market terminology, market data sources, market sizing, pestle market analysis, porter five forces analysis. Market segmentation: creating segments using cluster analysis.

Unit 2: Competitive Analysis: Competitive information, analysis and action process. Product and Service Analytics: Conjoint analysis, decision tree models, portfolio resource allocation, product and service metrics, attribute preference testing.

Unit 3: Price analytics: pricing techniques and assessments, profitable pricing, pricing for business markets, price discrimination. Distribution Analytics: Distribution channel characteristics, retail location selection, channel evaluation and selection, multi-channel distribution, distribution channel metrics.

Unit 4: Promotion Analytics: Promotion budget estimation, promotion budget allocation, promotion metrics for traditional and social media. Social media analytics. Data mining. Online Advertising, Pay Per Click (PPC), Google Adsense. Measuring advertising effectiveness.

Unit 5: Sales Analytics: Consumer sales process, ecommerce sales model, sales metrics, profitability metrics, support metrics. Sales forecasting methods; Simple moving method, weighted moving average method, exponential smoothening method, regression method. Trend analysis. Measuring customer satisfaction: Swedish customer satisfaction barometer, American customer satisfaction index.

Reference Books

- *Bendle, N.T., Farris, P.W., Pfeifer, P.E., Reibstein, D.J. Marketing Metrics, Pearson Education, Third Edition.*
- *Grigsby, M. (2018). Marketing Analytics: A Practical Guide to Improving Consumer Insights Using Data Techniques. Kogan Page Publishers.*
- *Sorger, S. (2013), Marketing Analytics: Strategic Models and Metrics, Admiral Press.*
- *Venkatesan, R., Farris, P., Wilcox, R.T. (2014), Cutting Edge Marketing Analytics: Real World Cases and Data Sets for Hands On Learning, Pearson Education.*
- *Winston, W. L. (2014). Marketing analytics: Data-driven techniques with Microsoft Excel. John Wiley & Sons.*

MBA_BA III SEMESTER **FINANCIAL ANALYTICS** **PAPER CODE: DSEC-03**	**Max. Marks: 100** **Min. Marks: 35** **External :60** **Internal: 40**

MBA (BA) 303: FINANCIAL ANALYTICS

Learning Objectives

The Objective of the course is to facilitate students to appreciate empirical issues and help identify research questions in the finance areas discussed along with the analytical tools for financial decision making.

Course Outcomes: After Completion of the course, student will be:

- Understanding the broader problems of finance by using analytical models.
- Possessing knowledge of Financial Market Structures, Asset pricing theories, Pricing models, Volatility forecasting and International Finance
- Demonstrating critical thinking about the application of theory in financial decision making
- Conducting in depth research using different analytical tools for generating new knowledge for business decision making
- Preparing Analytical reports for business decision making

CO/PO MATRIX

	CO/PO	PO1: Apply knowledge of management theories and practices to solve business problems	PO2: Foster analytical and critical thinking abilities for data-based decision making	PO3: Imbibe value-based leadership ability for decision making	PO4: Inculcate the capability to understand, analyze and communicate global, economic, legal, and ethical aspects of business	PO5: Equipped them with soft & hard skills and to make them industry ready
MBA103	**CO1:**Understanding the broader problems of finance by using analytical models	3	1	2	3	3
	CO2: Possessing knowledge of Financial Market Structures, Asset pricing theories, Pricing models, Volatility forecasting and International Finance	3	3	3	3	3

	CO3: Demonstrating critical thinking about the application of theory in financial decision making	3	3	3	3	3
	CO4: Conducting in depth research using different analytical tools for generating new knowledge for business decision making	3	3	3	2	3
	CO5:• Preparing Analytical reports for business decision making	3	3	3	3	3

Unit 1: Introduction to Financial Analytics: Definition, relevance and scope financial Analytics, recent trends in financial analytics

Financial Time Series and Their Characteristics: Asset Returns, Distributional Properties of Returns, Review of Statistical Distributions and properties of financial time Series.

Unit 2: Financial Market, Microstructure Issues (of Bond & Stock Market), Liquidity in Short term and Long term market segments.

Asset Portfolio Models: Basics of portfolio construction, Markowitz Theorem, Capital Asset Pricing Model, Divers ification and Portfolio Optimization

Unit 3: Modeling Volatility and Risk: Characteristics of volatility. Modeling volatility using ARCH/GARCH models. Volatility Estimation in Financial Market Turbulence, Measuring and modeling risk. Application of Value at Risk (VaR)

Unit 4: Risk Measurement in Financial Institutions, Measuring Market and Credit Risks, Modeling Credit Risk: Corporate Liabilities as contingent claims, Endogenous default boundaries and optional Capital Structure, Intensity Modeling, Rating based term-structure models,

Unit 5: Derivative Pricing: Issues regarding derivative markets. Brownian motion, Black -Sholes model. Modeling derivative prices

Empirical issues in International Finance, International Arbitrage and Parity Conditions, Yen Carry Trade and Interest Rate Parity, International Investment Issues,

Text Books

- *Frank, C. R., Jr.: Statistics and Econometrics, Holt, Rinehart and Winston, New York, 1971.*
- *Goldberger, Arthur S.: Introductory Econometrics, Harvard University Press, 1998.*
- *Gujarati, Damodar N.: Essentials of Econometrics, 2d ed., McGraw-Hill, New York, 1999.*
- *Hill, Carter, William Griffiths, and George Judge: Undergraduate Econometrics, John Wiley & Sons, New York, 2001.*

Reference Books

- *Hu, Teh-Wei: Econometrics: An Introductory Analysis, University Park Press, Baltimore, 1973.*
- *Katz, David A.: Econometric Theory and Applications, Prentice Hall, Englewood Cliffs, N.J., 1982.*
- *Klein, Lawrence R.: An Introduction to Econometrics, Prentice Hall, Englewood Cliffs, N.J., 1962.*

Capital Assets Pricing Model, Arbitrage Pricing Theory, Conditional CAPM Term Structure Modeling and Yield Curve Building, Idiosyncratic factors affecting yield and prices in bond markets, YC and the Economy.

MBA_BA IV SEMESTER RETAIL ANALYTICS PAPER CODE: DSEC -05	Max. Marks: 100 Min. Marks: 35 External :60 Internal: 40

RETAIL ANALYTICS

COURSE OBJECTIVES

- To enable the students to know about the information needs of Management.
- To introduce software packages like MS-EXCEL/SPSS.
- To introduce Promotion metrics, Web metrics and analysis.
- To analyze the consumer needs and product attributes choices that drives sales.
- To understand the in-store management and operations.

METHODOLOGY: The methodology is predominantly by Case analysis and Computer based Problem Solving, complemented by lecture mode. The students have to undertake a project work in a topic of their interest and product, to apply the concepts studied in the course.

Unit 1 Introduction to Retail Analytics: Overview of modern retailing marketplace and understanding technological aspects - Promotion MetricsCustomer Analytics Overview; Quantifying Customer Value. Using Stata for Basic Customer Analysis. Introduction to SPSS for retail analysis.

Unit 2 Advertising/Web metrics: Promotion Analysis - Syndicated scanner data analysis – Retail POS data analysis. Response Analysis: RFM Analysis, Logistic Regression, Neural Networks and Decision Trees. Role of Ms- Excel in Analysis.

Unit 3 Consumer Insights: with retail data –Overall Marketing Metrics – Introduction to R/R-Studio Market Basket Analysis, Trade Area Modeling, Real Estate Site Selection Modeling; Celebrity Marketing: Tracking Effectiveness, House Brand versus Name Brand, E-Business: Clicks and Mortar, Affinity Merchandising: Merchandise Cross-Sell Case Study.

Unit 4 In-Store Marketing Analysis: Presentation Understanding the Different Store Designs, Theories Merchandise Placement, All about Pricing, Loyalty Discount Philosophies. Types and Sizes: Retail Store Strategies, Store in a Store, What's in a Store: Convenience Stores to Hypermart Stores

Unit 5 Store Operations: Warehouse Clubs: Paying for the Privilege to Shop, Shopping by Design: Traffic Patterns, Category Management: Science behind the Merchandise Mix, Merchandise Placement: Strategy behind the Placement, Specialty Departments: Coffee, Breakfast, and Pizza, InStore Media: Advertising or Just Displays? Receipt Messages, In-Store Events, Holidays.

Text Books:

- *Wayne L. Winston (2014). Marketing Analytics-Data-Driven Techniques with Microsoft® Excel, John Wiley & Sons, Inc., Indianapolis, Indiana*
- *Stephen Sorger (2013), Marketing Analytics: Strategic Models and Metrics, Atlantic Publishers and Distributors.*
- *Hasty and Reardon: Retail Management, McGraw-Hill*

MBA_BA IV SEMESTER DATA MANAGEMENT AND ETHICS PAPER CODE: DSEC -06	Max. Marks: 100 Min. Marks: 35 External :60 Internal: 40

DATA MANAGEMENT AND ETHICS

Course Objective

The objective of the course is

CO1: To provide foundational knowledge on Research Ethics.

CO2: The objective of the course is to understand what research data, the need for managing and sharing research data and the lifecycle continuum of research data.

CO3: The course is also designed to impart the researchers with the knowledge of responsible conduct and research ethics.

Course Outcomes:

At the end of course student will be able to:

- Learn the significance of research data management in practice.
- Organize efforts to maintain research data integrity.
- Learn various rules, options and resources for research ethics.
- Understandandvaluetheneedforethicaldecisionmakingwhileperformingresearch.

Unit 1: Introduction to Data Management

The data problem: What? Why? The data life cycle: The data life cycle and roadmap,where to start data management ? Planning for data management : How to plan for data management? Creating a data management plan, data policies.

Unit 2: Documentation, Organization and Improving Data Analysis

Documentation: Research books and lab notebooks, methods, other useful documentation formats, metadata, standards. Organization: File organization, naming and documenting on ventions, databases. Improving data analysis: Raw versus analyzed data, preparing data for analysis, managing your research code. Managing sensitive data: Types, keeping data secure, anonymizing data.

Unit3: Research Ethics: An Introduction

Research Ethics: Best Ethical Practices, Morality vs ethics, Inauspicious beginnings, How science works. Plagiarize and Perish: Ideas, Sentences, Phrases, what is plagiarism, really? How many consecutive identical and un cited words constitute plagiarism? Self-plagiarism and recycling, Tools to discover plagiarism.

Unit4: Research Misconduct: Fabricating data, Falsification and Whistle blowing Research Misconduct: Fabricating Data: Why cheat? Data fabricator, Detection of image and data misrepresentation. Research Misconduct: Falsification and Whistle blowing: A" can of worms" indeed: the case of Elizabeth "Betsy" Goodwin, Deal with ethical quandaries, Cultivating a culture of openness, integrity, and accountability.

Unit 5: Author ship and Grant Proposals

Authorship: Who's an Author on a Scientific Paper and Why: The importance of the scientific publication, who should be listed as an author? How to avoid author quandaries, Authorship other than research papers, The difference between authorship and inventor ship and Other thoughts. Grant Proposals: Ethics and Success Intertwined: Why funding is crucial, Path to success in funding, Fair play and collaboration, Record keeping and fiscal responsibility, Pushing the limits on proposals.

Textbooks

- *Briney, K.(2015), Data Management for Researchers: Organize, maintain and share your data for research success (Research Skills), Pelagic Publishing.*
- *Stewart Jr., C. N.(2011), Research Ethics for Scientists: A companion for students, Wiley-Blackwell.*
-

Reference Books

- *Loue,S.(2000), Textbook of Research ethics: Theory and Practice, Springer Link.*
- *Israel, M. & Hay, I.(2006), Research Ethics for Social Scientists, SAGE Publications.*
- *Pryor, G.(2012), Managing Research Data, Facet publishing.*
- *Shamoo, A.& Resnik,D.B.(2002), Responsible Conduct of Research, Oxford University press, Third Edition.*

MBA_BA III SEMESTER DIGITAL MARKETING ANALYTICS PAPER CODE: DSEC -07	Max. Marks: 100 Min. Marks: 35 External :60 Internal: 40

DIGITAL MARKETING ANALYTICS

Course Objectives:

The aim of the course is to aid students in understanding digital marketing methods from the viewpoint of several parties such as analysts, consumers or entrepreneurs and to inculcate the fundamental concepts of digital marketing. The course includes knowledge of various tools of the trade such as Content analytics tools, audience analysis and content analysis.

Course Outcomes: At the end of course student will be able to:

- Understand the impact technology has on traditional marketing scenario.
- Design successful digital marketing campaigns.
- Analyze and optimize already existent digital marketing campaigns.
- Successfully perform informed use various digital media tools.

Unit 1: **Introduction:** Understanding the Digital Media Landscape: Digital Media Types, Paid & Owned Media Understanding Digital Analytics Concepts: Owned & Earned Social Metrics, Demystifying Web Data, Searching for the Right Metrics, Paid & Organic Searches, Aligning Digital and Traditional Analytics,

Unit 2: **Content creation Strategy:** Plan your content, strategy of creating content, Distribute & Promote content, Optimize Website UX & Landing Pages, Measure Impact
Content Analysis Tools: Content Audit and its Checklist, Real-Time Analytics, Optimizing Content Distribution &Content Consumption.

Unit 3: **Tools of trade:** Tools: Identification, Data Capture, Spam Prevention, Integration with Other Data Sources, Cost, Mobile Capability, API Access, Consistent User Interface, Workflow Functionality, Historical Data, Understanding Social Media Engagement Software, Easy-to-Navigate User Interface, Reliability, Robust Analytics Dashboards, Mobility, CRM Hooks, Social Governance, Monitoring Platform Integration

Unit 4: **Tools: Audience Analysis:** Audience Analysis Tools: What Is Audience Analysis? Use Cases, Strategies: Digital, Content & Engagement, Search Engine Optimization, Content Optimization , User Experience Design, Audience Segmentation, Audience Analysis Tool Types.

Unit 5: **Launching a new product and Formulating Research Plan**
Launching a New product: Product Lifecycle, Introduction Phase, Consumer Reaction, Consumer Concerns, Consumer's Unmet Needs, Growth Phase, Product Lifecycle Maturity Phase. Formulating Research Plan: Developing Source List, Data Sources, Analysis Channels, Search and Source Languages, Research Methods, Hypothesis, Analysis Time Frame, Identifying Project Team, Determining Depth of Analysis, Sentiment Approach, Filtering Spam .

Text Books

- *C. Hemann& K. Burbary (2013), Digital Marketing Analytics: Making sense of consumer data in a digital world, Que Publishing.*
- *Venkatesan, R. & Farris, P. (2014), Cutting-Edge Marketing Analytics: Real World Cases and Data Sets for Hands On Learning, Pearson Education.*

Reference Books

- *Winston, W.L. (2014), Marketing Analytics: Data-Driven Techniques with Microsoft Excel, Wiley.*
- *Sorger, S. (2013), Marketing Analytics: Strategic Models and Metrics, Admiral Press.*
- *Farris, P.W., Bendice, N.T., Pfeifer, P.E. &Reibstein D.J. (2010), Marketing Metrics: The Definitive Guide to measuring marketing performance, Pearson Education, Second Edition.*

MBA_BA III SEMESTER TIME SERIES ANALYSIS PAPER CODE: DSEC -08	Max. Marks: 100 Min. Marks: 35 External :60 Internal: 40

TIME SERIES ANALYSIS

Course Objectives

The course has been designed to acquaint the students with the set of modern analytical tools to solve practical problems in finance and bridge the gap between finance theories and practice by building operational models. The objective of this course is to provide knowledge of advanced quantitative and simulation tools to analyse financial data available on the performance of company, industry and economy, for forecasting future financial performance and to present suitable valuations.

Course Outcomes: On completion of this course the students will be able to:

CO1: Utilize the time series method to predict the future of sales in a concern.
CO2: Record the cyclical variations of the market and its trend.
CO3: Assess the degree of regression among the variables.
CO4: Suppress the large variations in predicting the trend.
CO5: Characterize the factors of causality in time series analysis.

Unit 1: Introduction to Time Series Analysis

Utility of the Time Series, Components of Time Series - Long term trend or secular trend - Seasonal variations - Cyclic variations - Random variations. Methods of Measuring Trend - Free hand or graphic method.

Unit 2: Introduction of Software and Data Types

Introduction of the Software, Introduction to financial data Analysis Using E-Views, Decision making, Uncertainty, Types of Data, Cross-section Data, Panel Data, Time series analysis, Exponential Smoothing, Classical Linear Regression Model.

Unit 3: Techniques of Financial Data Analysis and Forecasting

Auto Correlation Function, Partial Auto-correlation Function, Correlogram, Stationary and Non stationary Time series, Test of Stationarity, Auto Regressive, Moving Average, ARMA models of Stationary Time Series ARIMA (p, d, q) models for analysis and forecasting of financial data, Diagnostic checking, Q and LB Statistic, Box Jenkins Methodology for ARIMA models.

Unit 4: Multiple Regression Models

Multiple Regression models for financial data, Multiple Regression models for financial data, Co-integration, Vector Auto regression, Vector Error Correction Model, Logit and Probit models.

Unit 5: Modelling Asset Return Volatility

Modelling asset return volatility, ARCH, GARCH and EGARH models for estimating asset price volatility and volatility forecasting (Using MS-Excel and E-Views)

Suggested Readings:

- *Damodaran, A. (2008). Investment Valuation. John Wiley*
- *Hull, J.C. (2015). Risk Management and Financial Institution. John Wiley*
- *Brooks Chris, (2002). Introductory Econometrics for Finance, Cambridge Brooks, C. Introductory Econometrics for Finance. Cambridge*
- *Wayne A. Woodward, Henry L. Gray, Alan C Elliott, Applied Time Series Analyses, October 26, 2011 by CRC Press.*
- *Tsay, R.S. (2010). Analysis of Financial Time Series. (3rded.). New York, NY: John Wiley*

Generic Electives: Students must choose two generic electives in the third semester and one generic elective in the fourth semester. (Choose any Three from the group)

S. No.	Paper	Semester
1	Consumer Behaviour	III
2	Sales And Distribution Management	III
3	Human Resource Development And Organizational Development	III
4	Security Analysis & Portfolio Management	IV
5	Business Forecasting & Econometrics	III
6	Compensation Planning	IV
7	Talent Management	IV
8	Service Marketing And Retail Management	IV
9	Branding & Integrated Communication	IV
10	Project Appraisal and Finance	IV

MBA_BA III SEMESTER CONSUMER BEHAVIOUR PAPER CODE: MK-01	Max. Marks: 100 Min. Marks: 35 External :60 Internal: 40

MBA MK 01 - CONSUMER BEHAVIOUR

CourseObjective

To understand the role of consumer behaviour in marketing and to identify qualitative and quantitative methods of measuring consumer behavior

Course Outcomes: On the completion of the course, the student will be able to:

CO1. To explain the concept of Consumer Behaviour & describe Consumer research process in detail.
CO2. Understanding the concepts and process of communication
CO3. Apply internal dynamics in consumer behavior such as personality, perception, learning, motivation and attitude.
CO4. Examine appropriate research approaches including sampling, data collection and questionnaire design for specific marketing situations.
CO5. Evaluate the various models of consumer behavior.

Unit 1: **Introduction to Consumer Behavior:** Nature and Importance of CB, Application of CB in Marketing Consumer Research Process: Various Methods and techniques of consumers' research, Consumer Research Process, New developments in the field of consumer research.

Unit 2: **Individual Determinants of CB:** Motivation: needs/motives & goals, dynamic; Perception: Elements of Perception, Dynamics of Perception, Consumer Imagery, Learning: principles, theories, Personality: Theories, Personality and understanding Consumer Diversity, Brand Personality, self and Self Image, Attitude: Structural model of attitude.

Unit 3: **Group Determinants of CB:** Reference group influence: types of consumer relevant groups, factors affecting group influence, application of reference group concept. Family: Functions of family, family decision making, family life cycle (FLC), Opinion Leadership and Personal influence, Diffusion of Innovation: Adoption process. Diffusion process.

Unit 4: **Communication and Persuasion:** Communication – Components and Process, Designing Persuasive Communication

Consumer Decision Making Process:- Problem recognition, Information Search and Evaluation, Outlet Selection and Purchase Post purchase behavior.

Unit 5: **Models of CB:** Traditional Models of Consumer Behavior: Economic, Social and Psychological Contemporary Models of Consumer Behavior Nicosia, Howard & Sheth, Engel-Kollat-Blackwell, Input Process Output Model

Industrial Market& and Consumer Behavior-Meaning, scope and characteristics of industrial buyer, Factors affecting industrial buying, Participants in Industrial Buying, Industrial buying process.

Text Books

- *Leon G.Schiffmanand Leslie Lasar Kanuk,Consumer Behavior, Pearson Education,India,2002.*
- *PaulPeteretal.,ConsumerBehaviorandMarketingStrategy,TataMcGrawHill,IndianEdition,7th Edition 2005*

Reference Books

- *Frank R. Kardes, Consumer Behaviour and Managerial Decision Making, 2nd Edition.*
- *Assel, Consumer Behavior –A strategic Approach, Biztranza, 2008.*
- *Sheth Mittal, Consumer Behavior-A Managerial Perspective, Thomson Asia(P)Ltd.,2003.*
- *Abbael, Consumer behavior: Astrategic approach(Indian edition2005)Wiley2012.*
- *Hed, Hoyer. Consumer behavior, 2008 editionWiley2012.*
- *Das Gupta.Consumer behavior, 2008edition,Wiley2012.*
- *Shri Prakash. Theory of Consumer behavior, Iedition, Vikas2012.*
- *Srabanti Mukherjee,Consumerbehavior,Cengage Learning,2012.*
-

Suggested Readings:

- *Ajzen,I.(2011).Attitudes,personalityandbehavior(2.ed.,reprint).Maidenhead:OpenUniv.Press.*
- *Hawkins,D.I.,&Mothersbaugh,D.L.(2016).Consumerbehavior:buildingmarketingstrategy(Thirteenthediti on). NewYork, NY:McGraw-Hill Education.*
- *Schiffman, L. G., Kanuk, L.L., & Hansen, H. (2012).Consumer behaviour: a European outlook(2nded).Harlow, England; New York: Pearson Financial Times/Prentice Hall.*
  WhyWe Buy -The Science of Shopping-Paco Underhill.pdf. (n.d.).

MBA_BA III SEMESTER **SALES AND DISTRIBUTION MANAGEMENT** **PAPER CODE: GE-02**	**Max. Marks: 100** **Min. Marks: 35** **External :60** **Internal: 40**

SALES AND DISTRIBUTION MANAGEMENT

Course Objective

The objective of the course is to provide an understanding of the concepts, attitudes, techniques and approaches required for effective decision making in the areas of Sales and Distribution, the understanding of the practising manager's problems and dilemmas and to develop the skills critical for generating, evaluating and selecting sales and distribution strategies.

CO/PO Matrix					
	CO1	**CO2**	**CO3**	**CO4**	**CO5**
PO1	2	3	4	4	2
PO2	2	3	2	3	2
PO3	2	2	3	3	3
PO4	3	3	3	3	3
PO5	2	3	3	3	2
Average	2	3	3	3.2	2.33

COURSE OUTCOMES

Course Outcomes: On completion of the course the student will be able to:

CO1: Apply various concepts and techniques required for decision making in sales and distribution.
CO2: Solve different problems faced by sales managers and their solutions.
CO3: Use critical skills for generating, evaluating and selecting sales and distribution strategies.
CO3: Understand and evaluate the role of various channels
CO3: incorporate the benefits of Vertical marketing system.

Unit 1: Introduction of Sales Management:

Meaning and Objectives of Sales Management,Role of Sales Management in marketing, personal selling processand salesmanship,hard sales vs soft sales,setting personal selling objectives and strategies, determining sales-related marketing policies, Techniques of sales forecasting.

Unit 2: Theory of sales Management:

AIDAS theory, 'Right Set of Circumstances' Theory, Buying Formula Theory, Behavioral Equation Theory, Buyer-Seller Dyads, Importance of sales quotas and sales territories.

Organizing, Staffing and Training sales force: Sales organization structures, recruiting and selecting sales people, planning, executing and evaluating sales training programs.

Directing Sales Force Operations: motivating sales personnel, compensating sales people.

Unit 3: Evaluating and Controlling the Sales Effort: The sales budget, analysis of sales volume and profitability, evaluating salesperson's performance, Supervisory Styles.

Sales Promotion: Designing Sales Promotion Strategies, Consumer-Oriented Tools and Techniques of Sales Promotion, Trade Dealings and Retail Promotions.

Unit 4: **Introduction of Marketing Channels:** Meaning and importance of Marketing Channels, Types of channels, Designing Channels, Selection and Recruitment of Channel Partners, Channel Motivation, Channel Relationships Management, Channel Evaluation, Information Systems for Channels.

Unit 5: **Distribution System:** Design of distribution system,Vertical Marketing System, Horizontal and Multi-Channel Marketing Systems, Indian Distribution Scenario at Present, Understanding Distribution of services, IT and Logistics & SCM, Performance Measures.

Text Books

- *Anderson, J. C., Narus, J. A., &Narayandas, D. (2008). Business Market Management: Understanding, Creating, and Delivering Value. 3rd ed. Pearson Prentice Hall.*
- *Cavale, K. K. H. V. M. (2006). Sales and distribution management: text and cases. Tata McGraw-Hill Education.*
- *Cavale, K., Havaldar V M. (2006) Sales and distribution management: text and cases. Tata McGraw-Hill Education.*
- *Hutt, M. D., &Speh, T. W. (2012). Business marketing management: B2B. Cengage Learning. Gupta, S. L. (2009). Sales and distribution management. Excel Books India.*
- *Venugopal, P. (2008). Sales and distribution management: An Indian perspective. SAGE Publications India.*

MBA_BA III SEMESTER HUMAN RESOURCE DEVELOPMENT & ORGANIZATIONAL DEVELOPMENT PAPER CODE: GE-03	Max. Marks: 100 Min. Marks: 35 External :60 Internal: 40

HUMAN RESOURCE DEVELOPMENT & ORGANIZATIONAL DEVELOPMENT

Course Objective

The course highlights the interventions of HRD & OD and its application.

Course Outcomes: After completion of course the students will be able to:

CO1: Understand the concept of HRD, HRD Interventions, OD and OD interventions.
CO2: Design training & development program.
CO3: Develop career development plans and performance appraisal systems in theorganization.
CO4: Conduct HRD audit.
CO5: Plan & implement HRD & organizational development interventions.

CO/PO MATRIX					
Course Outcomes	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**
CO1	3	3	2	2	3
CO2	3	3	3	3	2
CO3	3	3	3	2	2
CO4	2	3	3	3	2
CO5	2	2	2	2	2
AVERAGE	2.6	2.8	2.6	2.4	2.2

Unit 1: **HRD:** Concept, Goals, Importance; History of HRD in India; HRD Interventions; Qualities of HRD Professionals; Present Status of HRD in India.

Unit 2: **Training Human Resource:** Nature of Training, Training Need Assessment, Training Design, Training Delivery, Training Evaluation.
Talent Management and Development: Careers and Career Planning, Specific Individual Career Issues, HR Development Approaches: The Integrative Framework, Human Capital Appraisal Approach, HRD Score Card Approach, PCMM Approach

Unit 3: **Performance Management System:** Identifying and Measuring Employee Performance; Performance Appraisal; Tools for Measuring Performance Appraisal: MBO, Psychological Appraisal, Assessment Centre, 360- degree & 720-degree Feedback; Potential Appraisal; Competency Mapping and Competency Mapping Model

Unit 4: **HRD Audit:** Concept and Objectives, Methodology, Preparation of HRD Audit, HRD Audit Failures.

Unit 5: **Organization Development:** Concept and Definition, Objectives, Process of OD, Interventions of OD-Sensitivity Training, Survey Feedback, Process Consultation Team Building, Intergroup Development, Appreciative Inquiry.

Suggested Readings:

- Rao, T., &Pareek, U. (2007). *Designing and Managing HR Systems*. New Delhi: Oxford and IBH Publishing Co. Pvt. Ltd.
- Jones, G. R. (2006). *Organizational Theory, Design, and Change*. Toronto: Pearson Prentice Hall.
- French, W., & Bel, C. H. (1999). *Organization Development: Behavioral Science Interventionsfor Organization Improvement*. Pearson.
- Mathis, R.L, & Jackson, J.H. (2008). *Human Resource Management*. Thomson South Western.
- McGuire, D. (2014). *Human Resource Development, Second Edition.* SAGE Publications Ltd.

MBA_BA IV SEMESTER **SECURITIES ANALYSIS AND PORTFOLIO MANAGEMENT** **PAPER CODE: GE-04**	**Max. Marks: 100** **Min. Marks: 35** **External :60** **Internal: 40**

SECURITIES ANALYSIS AND PORTFOLIO MANAGEMENT

Course Outcomes: Upon completion of this course, students will be able to:

CO1: Understanding the measures of risk and return in financial assets, based on the characteristics of different financial assets and value assets such as stocks and bonds for investment, concept and theories of traditional and modern portfolio management

CO2: Analyzing stock returns and risk as EIC framework and through technical analysis, indicators, and oscillators using various modes for the purpose of investment.

CO3: Learning alpha, beta, correlation and anticipated returns in investing, predicting probabilities to analyze risk and return evaluation through hands on session on excel

CO4: Evaluating investment advice from brokers to develop optimal portfolio and selecting best portfolio based on different evaluation models

CO5: Measuring the risk and return of a portfolio position, diversify and manage investment portfolios in accordance with a person's risk preferences

CO/PO MATRIX					
Course Outcome	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**
CO1	1	2	1	2	3
CO2	2	1	3	1	1
CO3	2	3	2	1	3
CO4	1	2	2	1	3
CO5	2	3	2	1	1

Unit 1: Investment: Meaning, Investment vs. Speculation:
Characteristics of Investment; Investment Process; Securities Market; Issue of Securities; Initial Public Offer (IPO); Right Issue; Bonus Issue; Private Placement; Listing; Trading; Settlement

Unit 2: Valuation of Securities:
Basic Concepts: Return, Risk, Intrinsic Value; Problem of Return & Risk; Expected Return, Components of Risk; Measurement of Risk, Variance, Standard Deviation, Security Beta; Calculating & Interpreting Beta, Valuation of Fixed Income Securities; Debentures and Bonds; Current Yield; Yield To Maturity (YTM); Yield to Call (YTC); Bond Duration Valuation of Equity; Constant Rupee Dividend Model; Constant Growth Model; Multiple Growth Model; Price Earnings (P/E) Approach.

Unit 3: Approaches to Security Analysis: Fundamental Analysis:
Economy, Industry and Company Analysis;
Technical Analysis: Dow Theory; Elliot Wave; Moving Average, Exponential Average; Oscillators; Rate of Change (ROC); Relative Strength Index (RSI); Moving Average Convergence Divergence (MACD); Breadth of the Market;

Unit 4: Portfolio Analysis and Selection:

Portfolio Return and Portfolio Risk; Modern Portfolio Theory; Markowitz Theory; William Sharpe's Single Index Model; Capital Asset Pricing Model (CAPM); Arbitrage Pricing Theory (APT); Efficient Market Hypothesis (EMH); Security Market Line (SML) & Capital Asset Pricing Model (CAPM); Estimate CAPM Beta; Using the CAPM to Calculate the Portfolio Return

Unit 5: Portfolio Evaluation & Revision:

Concept of Portfolio Evaluation, Steps & Methods of Portfolio Evaluation: Sharpe's, Treynor's and Jensen's Measures of Portfolio Performance Evaluation;
Portfolio Revision: Concept, Need, Constraints, Revised Techniques

Suggested Readings:

- *Bodie, Z. K. (2005). Investments (6th Edition ed.). New Delhi: Tata McGraw HillPublishing Company Ltd*
- *Chandra, I. A. (2012). Investment Analysis and Portfolio Management (Fourth Edition).*
- *Published by Tata McGraw-Hill Education Pvt. Ltd*
- *Jordan, R. J. (1995). Security Analysis and Portfolio Management. (New Delhi, India.: Published by Prentice Hall*
- *V.A., A. (1997). Security Analysis and Portfolio Management. New Delhi, India: Himalaya Publishing House*
- *V. Gangadhar. (2006). Security Analysis and Portfolio Management. Anmol PublicationsPvt. Ltd*
- *Security Analysis & Portfolio Management - Fisher and Jordan, 6/e Pearson, PHI.*

MBA_BA IV SEMESTER **FINANCIAL ECONOMETRICS** **PAPER CODE: GE-05**	**Max. Marks: 100** **Min. Marks: 35** **External :60** **Internal: 40**

FINANCIAL ECONOMETRICS

Course Objective

The course aims to provide students with the basic framework of Financial Econometrics.

Course Outcomes: In particular, it will benefit students in:

CO1: Understanding types and forms of data and how to use them in econometricanalysis.

CO2: Identifying sources of financial data (Bloomberg, Capital IQ, Compustat, Yahoo Finance, etc.) to retrieve necessary data for econometric analysis.

CO3: Demonstrating knowledge in econometric methods such as regression analysis and Forecasting Models.

CO4: Helping students acquire skills in using computer Software (Eviews, excel) to perform econometric applications.

CO5: Developing their ability to model the expected mean and volatility in financial data as a means to a more informed assessment of the risk and return associated with differentinvestment strategies.

CO/PO MATRIX					
Course Outcome	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**
CO1	**2**	**1**	**3**	**2**	**3**
CO2	**1**	**2**	**3**	**1**	**1**
CO3	**3**	**3**	**1**	**1**	**3**
CO4	**2**	**2**	**2**	**1**	**3**
CO5	**2**	**3**	**2**	**3**	**1**

Unit 1: Introduction of Financial Econometrics

Meaning of Econometrics, Econometrics as a separate Discipline; Methodology of Econometrics, Types of Econometrics, specification of Mathematical Model, Estimation of Econometrical Model, Economic Data Types

Sources of Economic Data: Links to Economic Data on the Internet, Interpreting Economic Data, Obtaining the Data

UNIT 2: Time series Econometrics: Some basic concepts

Testing for Trends and Unit Roots: Stochastic Processes, Unit Root Stochastic Processes, Trend Stationary and Difference Stationary Stochastic Processes, Integrated Stochastic Processes, The Unit Root Test (Dickey Fuller Test, Augmented Dickey Fuller test and Phillips-Perron Test)

UNIT 3: Single Equation Regression Models:

Estimation of Regression Model (OLS)

The Model Interpretation of Regression, The Method of Ordinary Least Squares, The Classical Linear Regression Model: TheAssumption Underline, The Method of Least Squares, Standard Errors of Least Squares Estimates, The Coefficient of Determination r^2: A Measure of Goodness of Fit

UNIT 4: Multiple Regression Analysis and validation of model assumptions

The Three- Variable Model: Notation and Assumptions, Interpretations of Multiple Regression Equation, The Meaning of Partial Regression Coefficients, OLS and ML Estimation of the Partial Regression Coefficients, The Multiple Coefficients of Determination R^2 and the Multiple Coefficients of Correlation R, R^2 and Adjusted R^2

UNIT 5: Validation of Regression Model Assumptions Test

Multi-collinearity, Heteroscedasticity, Autocorrelation, Residual normality test

Time Series Econometrics: Forecasting

Approaches to Economic Forecasting, AR, MA and ARIMA Modeling of Time Series Data, Forecasting.

The Research Process: Writing a Research Proposal, A Process for writing a Research Report

Suggested Readings:

- *Wooldridge, Jeffrey M.: Introductory Econometrics, South-Western College Publishing,2000.*
- *Griffiths, William E., R. Carter Hill and George G. Judge: Learning and Practicing Econometrics, John Wiley & Sons, New York, 1993.*
- *Gujarati, Damodar N.: Essentials of Econometrics, 4th ed., McGraw-Hill, New York, 2004.*
- *Hill, Carter, William Griffiths, and George Judge: Undergraduate Econometrics, John Wiley & Sons, New York, 2001.*
- *Greene, William H.: Econometric Analysis, 4th ed., Prentice Hall, Englewood Cliffs, N. J.,2000.*
- *Patterson, Kerry: An Introduction to Applied Econometrics: A Time Series Approach, St. Martin's Press, New York, 2000.*
- *Campbell, J. L. (1997). The Econometrics of Financial Markets: Princeton University Press, Princeton, N.J.*

MBA_BA IV SEMESTER COMPENSATION PLANNING PAPER CODE: GE-06	Max. Marks: 100 Min. Marks: 35 External :60 Internal: 40

COMPENSATION PLANNING

Course Objective

This course will examine the strategic use of compensation systems by management to attract, motivate, retain, and reward employee performance. This course will explore the factors of job evaluation as the basis of compensation strategy offering students an opportunity to develop competencies in making equitable compensation decisions.

PROGRAM OUTCOMES

PO1: Apply knowledge of management theories and practices to solve business problems
PO2: Foster Analytical and critical thinking abilities for decision making
PO3: Imbibe value based leadership ability for decision making
PO4: Inculcate the capability to understand, synthesize and communicate global, economic, legal, and ethical aspects of business
PO5: Equipped them with soft and hard skills and to make them industry ready

CO/PO MATRIX					
Course Outcomes	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**
CO1	3	3	1	3	2
CO2	2	1	1	3	1
CO3	3	3	3	2	3
CO4	2	2	2	2	2
CO5	2	2	1	3	3
AVERAGE	**2.4**	**2.2**	**1.6**	**2.6**	**2.2**

Course Outcomes: After the completion of the course, the students will be able to:

CO1: Understand the different components of compensation.
CO2: Comprehend and evaluate the role of pay commissions in compensation planning.
CO3: Evaluate and implement the knowledge to solve compensation-related problems in organizations.
CO4: Rationally design the compensation structure for the organization.
CO5: Recognize the important issues of compensating humans in an organization by creating Equitable Pay Systems at international levels.

Unit 1: Introduction to Compensation Management: Concept of Compensation, Factor affecting Employee Compensation, Understanding Elements of compensation structure- Indian Practices, Dimensions; Concept of Reward, Financial and Non-Financial compensation system, Concept of Total Reward System , The 3-P compensation concept.

Unit 2: Employee Behavior and Wages and Salary Administration: Compensation strategy with HR strategy and business strategy, Wage Boards, Economic and Social objectives of wage policy, Concept of Wages and its types, Wage Differentials. Pay Commissions, Concept of Internal equity, External parity.

Unit 3: **Designing Compensation System:** Process of Wage Fixation- Job Analysis, Job Evaluation- Methods Job Pricing, Designing pay ranges and bands, Methods of Payment, Salary Progression, The Total Pay Model.

Unit 4: **Employee Benefits:** Employee Benefits- Classification , Employee benefit determination process, Retirement Benefits, Incentives, Types of Incentives- Individual and Group, Fringe Benefits-Objectives, Types, Performance and Skill based Pay system, Voluntary Retirement scheme.

Unit 5: **Executive compensation and International compensation-** International Compensation, Recognizing Variations, Executive Compensation, Expatriate Pay, Elements of Expatriate Compensation, Strategic Choices In Global Compensation , New Trend with future trend in compensation management.

Suggested Readings:

- *Bhatia, D. K. (2009). Compensation Management. India: Himalayas Publishing House.*
- *Henderson, R. (2007). Compensation Management in a Knowledge Based world. Pearson, 9th Edition.*
- *Newman, J. M., &Milkovich, G. T. (2016). Compensation. Mc Graw Hill Education.*

MBA_BA IV SEMESTER **TALENT MANAGEMENT** **PAPER CODE: GE-07**	**Max. Marks: 100** **Min. Marks: 35** **External :60** **Internal: 40**

TALENT MANAGEMENT

Course Outcomes

Upon completion of course, students will be able to:

CO1: Understand the concept of Talent management and its relevance in organizations.
CO2: Develop the necessary skill set for the application of various Talent issues.
CO3: Integrate the concepts of talent management with several key HR functions.
CO4: Understand acquisition strategies of talent management
CO5: Understand best strategies for talent engagement and retention

CO/PO MATRIX					
Course Outcomes	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**
CO1	**3**	**3**	**2**	**2**	**3**
CO2	**3**	**3**	**3**	**3**	**3**
CO3	**3**	**2**	**2**	**2**	**2**
CO4	**2**	**2**	**2**	**3**	**2**
CO5	**2**	**2**	**2**	**2**	**2**
AVERAGE	**2.6**	**2.4**	**2.2**	**2.4**	**2.4**

Unit 1: Introduction to Talent Management:
Concept, Talent Management Process, Significance of Talent Management;
Introduction to Talent Management System, Steps to create TMS, Navigating forces impacting Talent Management,

Unit 2: Building Blocks of Talent Management:
Competency creating values, Performance Management, Evaluating Employee Potential, Using Talent Management model for Recruitment & Selection

Unit 3: Talent Management Strategy:
Developing a Talent Management Strategy, Mapping Business Strategies and Talent Management. Objectives of Talent Planning, Steps in Strategic Talent Planning.
Talent Integration: Leadership & Team Building; Succession Planning Program

Unit 4: Talent Acquisition:
Introduction, Talent Acquisition, Recruiting Process, Strategic Trends in Talent Acquisition, Talent acquisition management solutions.
Integrating Training & Development with Talent Management

Unit 5: Talent Engagement and Retention:

Introduction, Concept of Talent Engagement and Talent Retention, Best Strategies for Talent Engagement and Retention

Talent Management Issues, Challenges, Best Practices of Talent Management, Use of IT to support Talent Management System

References

- *Lance A Berger, Dorothy R Berger, The Talent Management Handbook, 2e, TMH, 2008*
- *Ravinder Shukla, Talent Management: Process of Developing and Integrating Skilled Workers, Global India Publications, 2009.*
- *Marshall Goldsmith, Louis Carter, Best Practices in Talent Management: How the World's Leading Corporations, Wiley,2010.*
- *Hugh Scullion, David G. Collings, Global Talent Management, Routledge, 2011.*

MBA_BA IV SEMESTER **SERVICE MARKETING AND RETAIL MANAGEMENT** **PAPER CODE: GE-08**	**Max. Marks: 100** **Min. Marks: 35** **External :60** **Internal: 40**

SERVICE MARKETING AND RETAIL MANAGEMENT

Course Objective

The course aims to disseminate the insights of services marketing and retail management and the latest changes in services and retail formats.

Course Outcomes: On completion of the course students will be able to:

CO1: Understand basics of services attribute in Global, Marketing Environment & Growth of Sectorand demonstrate all the determinants of service marketing mix practically
CO2: Evaluate the Service quality model and learn to increase service quality & Productivity
CO3: Analyze complete Customer orientation, Customer satisfaction, and service recovery in theservice sector.
CO4: Understand the retailing environment, its concept, function, retailing strategies along withdifferent outlets of retailing
CO5: Evaluate retail customers through mapping society along with retails situational analysis byownership and other traditional forms.

CO/PO METRIX

	CO1	CO2	CO3	CO4	CO5
PO1	1	2	3	2	3
PO2	2	3	3	3	2
PO3	3	2	2	3	3
PO4	3	1	3	2	3
PO5	3	3	3	3	3
Average	2.4	2.2	2.8	2.8	2.8

Unit 1: Understanding Service Markets, Products and Customers: Introduction to Services, what are Services? Why Services Marketing? Service and Technology, Characteristics of Services and their Resulting Implications, Services Marketing Mix: Traditional Marketing Mix and Extended Mix for Services; The Gaps Model of Service Quality: The Customer Gap, The Providers Gap, The 3 stage model of service consumption.

Unit 2: Building the Service Model; Customer Expectations of Service: Service Expectations, Zone of Tolerance, Factors that Influence Customer Expectations of Service, Customer Perceptions of Service: Customer Perceptions, Customer Satisfaction, Service Quality, SERVQUAL Model, E-Service Quality, Service Encounters.

Unit 3: The World of Retailing: Concepts of Retail, Evolution of Retail Management, Retailing Principles, Retail Sales goals, the changing urban consumer, Retail Growth, Retail Sectors Retail in India; Retail Mix; Financial Planning in Retail: Issues in cash management, effective methods of cash management.

Unit 4: Organized retail in India, Sectors contributing to retail, Large Indian retailers; Unorganised Retail: Various Segments in the Indian Retail industry, Emerging Trends in retailing.

Retail Format: Store Based- Ownership Based Store Formats (Independent Retailers, chain stores, Franchises, Co-operative Stores), Merchandise Based Store Format (Convenience stores, supermarkets, Hypermarkets, Speciality stores, Departmental Stores, factory outlets, catalogue showrooms);

Non-Store Based Retail Format: Direct sales, Email Orders, Postal Orders, Telemarketing, Automated Vending, Kiosk; Service Based: Banks, Car Rental, Service Contracts. Traditional Retailing and Non-Store based Retailing; Other Emerging retail format; E-Retailing: Reasons for Popularity of internet Retailing, Online shopping frauds and precautions.

Unit 5: Store Location: Trade Area Analysis- The Huff Gravity Model, Location criteria, types of location; Retail Marketing Segmentation, Strategic Planning in Retail, Financial Strategy, Merchandise Planning: Inventory Management, Category Management, Stock Keeping Units; Store Designing and operations: Layouts, Visual Merchandising, Atmospherics, Store operation and Loss prevention; Store Employees: recruiting and selecting store employees, training, evaluating employees, career opportunities in retail

Suggested Readings:

- *Rampal, M.K., and Gupta, S.L. (2010). Service Marketing Concepts, Applications, and Cases.*
- *Chowdhary, N., & Choudhary, M. (2008). Marketing of Services. MacMillan Publishers India Limited.*
- *Lovelock, C., &Wirtz, J. (2016). Service Marketing (8 ed.). World Scientific.*
- *Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1985). A conceptual model of service quality and its implication for future research. Journal of Marketing, Vol. 49, No. 4 (Autumn, 1985), pp. 41-50 (10 pages).*
- *Berman, B., & Evans, J. R. (2018). Retail Management a strategic approach. Pearson.*
- *Singh, H. (2009). Retail management: A global perspective. S. Chand Publishing.*
- *Barry, B. (2003). Retail management: A strategic approach. Pearson Education, India.*

MBA_BA IV SEMESTER **BRANDING & INTEGRATED MARKETING COMMUNICATION** **PAPER CODE: GE-09**	**Max. Marks: 100** **Min. Marks: 35** **External :60** **Internal: 40**

BRANDING & INTEGRATED MARKETING COMMUNICATION

Course Objectives

The aim of the paper is to acquaint the students with the concept of brand, its development and management. Also, the students will learn about the concepts of integrated marketing communication.

Course Outcomes: On completion of the course, the students will be able to:

CO1: Understand the concepts of brand and branding.
CO2: Understand how to manage the brand equity
CO3: Learn the concepts of integrated marketing communication.
CO4: Analyze the target audience and media along with measures of advertising.CO5: Understand the concept of communication via modern media.

Unit 1: Introduction: Brand - Concept and definition, Evolution of Brands, Role of Brands, Brand Management - Concept and definition, Product Vs Brand, Branding- Meaning and Purpose, Scope of Branding, Creation of Brands, Strategic Brand Management – Concept and Meaning, Branding Decisions-Branding Decisions, Packaging – Objectives and Importance; Labelling. Case Study of Strong Indian Brands.

Unit 2: Brand Equity: Brand Equity: Concept and Definition, Customer Based Brand Equity, Aaker's Brand Equity Model, Building Brand Equity, Measuring Brand Equity, Managing Brand Equity, BrandLoyalty, Brand Awareness, Perceived Quality, Brand Associations, Brand Extension, Brand Revitalization, Global Branding.

Unit 3: Integrated Marketing Communication: An Introduction, Need and Role of IMC within Marketing Process; IMC Challenges; IMC Components and Tools: Advertising, Sales Promotion; Direct Marketing, Public Relations and Publicity. Integration Tools, IMC Process.

Unit 4: Understanding Advertising: Concept; Communication Planning; Objectives; Functions and Significance; Classification of Advertising; Factors Determining the Advertising Opportunity of a Product/Service/Idea; Types of Appeals and Advertising Messages.

Unit 5: Communication via Modern Media: Introduction; Online Advertising; Ways of E-advertising; Types of Digital Ads; On the Internet; On Mobile Devices; Pros and Cons of Mobile Marketing; Pricing of Digital Ads; E- direct Marketing; E-sales Promotion; E-Public Relations; Social Media: Significance of Social Media in Marketing Communication Strategies, Key Social Media Platforms, Opportunities and Threats of Social Media Application.

Suggested Readings:

- *Aaker, D. A. (1991). ManagingBrand Equity. Simon and Schuster.*
- *Aaker, D. A. (2012). Building Strong Brands. Simon and Schuster.*
- *Belch, G.E., Belch, M. A., &Purani K. (2010). Advertising and Promotion: An integrated marketing communications perspective, (7th edition.). New Delhi: Tata McGraw Hill Education Private Limited.*
- *Clow, K.E. &Baack, D. (2012). Integrated Advertising, Promotion and Marketing Communications, (4th edition.). New Delhi: Pearson.*
- *Keller, K. L., Parameswaran, M. G., & Jacob, I. (2011). Strategic brand management: Building, measuring, and managing brand equity. Pearson Education India.*

MBA_BA IV SEMESTER **PROJECT APPRAISAL AND FINANCE** **PAPER CODE: GE-10**	**Max. Marks: 100** **Min. Marks: 35** **External :60** **Internal: 40**

PROJECT APPRAISAL AND FINANCE

Course Objective

The course explains the concepts of Project Management from planning to execution of projects, the feasibility analysis and network analysis tools for cost and time estimation, comprehending the fundamentals of Contract Administration, Costing and Budgeting, and enabling the students to analyze, apply and appreciate contemporary project management tools and methodologies.

Course Outcomes: After completion of successful course student will be:

CO1: understanding the relevance of alternative project appraisal techniques, financial structuring and financing alternative identification of a project, feasibility analysis including market, technical and financial appraisal of a project and the elements of social cost benefit analysis.

CO2: analyzing the learning and understand techniques for Project planning, scheduling and Execution Control

CO3: applying technology tools for communication, collaboration, information management, and decision support and appraisal techniques for evaluating live projects

CO4: interacting with team and stakeholders in a professional manner, respecting differences, to ensure a collaborative project environment

CO5: evaluating and appreciating contemporary project management tools and methodologies in Indian context.

CO-PO Matrix					
Course-Outcome	**PO1:** Apply knowledge of management theories and practices to solve business problems	**PO2:** Foster analytical and critical thinking abilities for data-based decision making	**PO3:** Imbibe value based leadership ability for decision making	**PO4:** Inculcate the capability to understand, analyze and communicate global, economic, legal, and ethical aspects of business	**PO5:** Equipped them with soft & hard skills and to make them industry ready.
CO1	3	3	3	3	3
CO2	3	3	3	3	3
CO3	3	3	2	3	3
CO4	3	3	3	3	3
CO5	3	3	1	3	3
Average	3	3	2.4	3	3

Unit-1: **Appraisal-** An introduction, Project appraisal and evaluation, Project cycle, Project cycle management. Private and Public sector Projects/ commercial / National probability; Identification of investment opportunities- industry analysis review of project profiles, feasibility, study. Project identification and formulation. Generation of Project ideas, Entrepreneurship- concept, Theory and perspective

.**Unit-2: Market and Technical Analysis-** Market Analysis of a project, Need for Market Analysis, Demand and supply analysis, Collection analysis, primary/secondary data, Forecasting techniques, Technical appraisal of a project, Business and Technology Acquisition and management of technology.

Unit-3: Investment Appraisal- Introductions of techniques, Sensitivity Analysis, Scenario Analysis, Decision Tree Analysis, components of financial analysis, financial needs of a Project, investment criteria, PERT Model, CPM Model

Unit-4: Social Cost Benefit Analysis- Value added concept, social surplus indirect impact of projects, rationale of SCBA Efficiency and Equity in Project Appraisal UNIDO Approach, Little Mirlees Approach. Project Appraisal of Indian Plans

Unit-5 Financial Analysis - Estimation of cost of project & Means of financing; Traditional sources of financing: Equity shares, preference shares, Debentures/bonds, loan from Financial institutions, Alternative sources of financing: FDI & FII, Venture Capital, Projected cash flows of project, Appraisal Criteria, NPV, IRR, PBP, ARR.

Suggested Readings:

- Chandra, P. (2017). Projects: Planning Analysis Selection Financing Implementation andReview, 8th Ed.
- Desai, V. (2000). Project Management and Entrepreneurship. Himalaya Publishing House.
- Passenheim, O. (2009). Project Management. Ventus Publishing APS.
- Vasant Desai - Project Management - Himalaya Publishing House.
- Chaudhary S.; Project Management, Tata Mc Graw Hill
- Meredith Jack R., Mantel Samuel J.; Project Management, IV Edition, John Wiley & Sons
- Gopalakrishnan P., Ramamoorthy V.E; Textbook of Project Management, MacMillanPublishers
- Patel Bhavesh M.; Project Management- Strategic Financial Planning, Education &
- Control, Vikas Pub. House, 2014