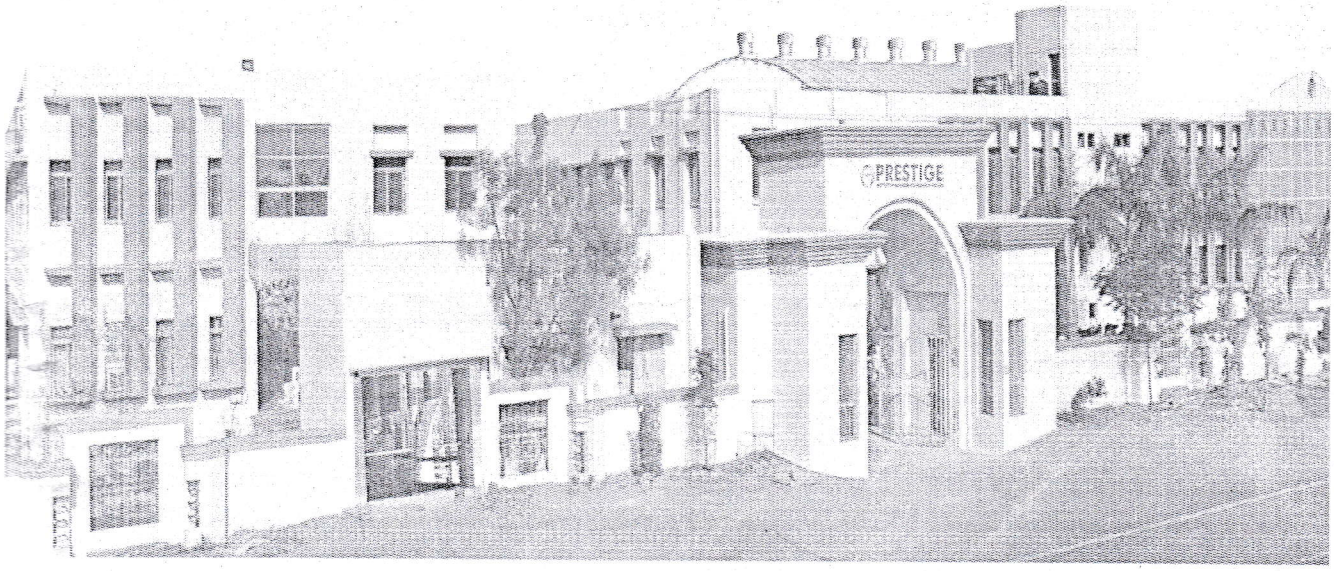
PRESTIGE
INSTITUTE OF MANAGEMENT & RESEARCH, GWALIOR
AN AUTONOMOUS INSTITUTE ACCREDITED WITH UGC NAAC GRADE 'A' AND NBA (AICTE)

COURSE CURRICULUM
(NEP & CBCS SEMESTER WISE)
for
Master of Business Administration
(BUSINESS ANALYTICS)

(Academic Year 2025-27)



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-BA 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	3	1	0	3+1+0= 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-I	0	1	2	0+1+2= 3	2	25	25	50
8	MBA-BA 108	SD	Introduction to Python for Business Analytics	0	1	2	0+1+2= 3	2	25	25	50
9	MBA-BA 109	SD	Comprehensive Viva	0	1	2	0+1+2= 3	2	50	50	100
			TOTAL	18	9	6		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	1	2	0+1+2=3	2	25	25	50
8	MBA-BA 208	SD	Database and SQL Lab (Practical)	0	1	2	0+1+2=3	2	25	25	50
9	MBA-BA 209	SD	Project- Data Analysis with Python	0	1	2	0+1+2=3	2	50	50	100
10	MBA-BA 210	SD	Industry Readiness-II*	0	1	2	0+1+2=3	0			
			TOTAL	18	9	6		30			800

*Non-Credit but Mandatory. Student should pass the course.

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-BA 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	1	2	0+1+2= 3	2	25	25	50
7	MBA-BA 307	SD	Data Visualization Lab	0	1	2	0+1+2= 3	2	25	25	50
8	MBA-BA 308	SD	Summer Training Report & Presentation	0	2	4	0+2+4= 6	4	50	50	100
			TOTAL	15	9	8		28			700

		*Elective Paper in MBA_BA III Semester
1	MBA-BA GE 303	GE-01 Consumer Behavior
2	MBA-BA DSEC 304	DSEC-01 Social Media and Web Analytics
3	MBA-BA DSEC 305	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 I	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	4	0+2+4=6	4	50	50	100
7	MBA-BA 407	SD	Predictive Analytics using SPSS	0	2	4	0+2+4=6	4	50	50	100
8	Mandatory NON CGPA elective	VAC	Certification Course from NPTEL/SWAYAM								
			TOTAL	15	9	8		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.

GRANDTOTALOFALLTHESEMESTERS					
Semesters	Semester1	Semester2	Semester 3	Semester 4	
Credits	30	30	28	28	
Grand Total ofCredits	116				

Group 1 - 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

Group 2 - Generic Electives (Choose any Two from the group)

Code	Paper	Semester
GE-01	Consumer Behavior	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 UGA 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)

PROGRAM OUTCOMES: MBA BUSINESS ANALYTICS

PO1: Understand management theories and practices to solve business problems using analytics

PO2: Apply appropriate analytical methods to interpret data using latest data analytics tools.

PO3: Enable critical thinking and cultivate cognitive skills.

PO4: Appraise the impact of managerial decisions and business priorities on the societal, economic and environmental aspects

PO5: Adapt life-long learning and ethical orientation through enriched knowledge and skills.

Program Specific Outcomes (PSOs) for a 2-Year MBA in Business Analytics

PSO1: Analyse business problems, identify relevant data sources, and select appropriate analytical techniques to derive actionable insights. (Relates to PO1 & PO2, PO3)

PSO2: Understand the core business functions and how analytics can be applied to improve efficiency and effectiveness within each function. (Relates to PO1 & PO4)

PSO3: Adapt to the rapidly evolving field of business analytics and applying best practices through continuous learning and professional development. (Relates to PO5)

COURSE OUTLINE (Batch 2025-27)
MBA_BA I Semester

MBA_BA I Semester MANAGEMENT CONCEPTS & OB COURSE CODE: MBA BA-101	Max. Marks: 100 Min. Marks: 35 External : 60 Internal : 40

Credits: 4

MBA(BA)101
MANAGEMENT CONCEPTS & ORGANISATIONAL BEHAVIOUR

Course Objectives:

The course comprehends the functions of management and individual, group and organizational behaviour; models and metrics to measure the behaviours; and associated behavioural& organizational changes.

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

CO1a: Integrate management principles into management practices.

CO1b: Determine the nature of organization structure.

CO2: Understand and apply control methods.

CO3: Understand models of organizational behaviour, perception, organizational change, group dynamism and organizational conflict.

CO4: Measure Employees' attitude and Personality Types, motivation factors, leadership styles, and stress.

PO-CO-PSO Matrix:

COs	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1a	3	2	1	2	1	3	2	2
CO1b	2	3	2	1	1	2	3	2
CO2	3	2	2	1	2	2	2	2
CO3	2	3	2	1	1	3	2	3
CO4	3	3	2	2	2	2	3	2

Course Mapping:

Local	Regional	National	Global
Y	Y	Y	N

Professional Ethics	Gender	Human Values	Environment & Sustainability
Y	Y	Y	N

Employability	Entrepreneurship	Skill Development
Y	N	Y

Course Pedagogy:

Lecture, Case study, hands on analysis

Course Content:

Unit 1: Management:- Concept, Nature & Functions of Management, 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

Unit 2: Organizing:- Organization Structure and Design, Principles of organizations.

Staffing:- Concept & Process

Directing:- Concept, Principles & Techniques of Directing.

Unit 3: Controlling:- Concept; Process; Types of Control: Balance Scorecard, factors influencing control effectiveness.

Introduction to Organizational Behaviour:- Nature; Importance; contributing disciplines, Models of OB.

Unit 4: 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.

Unit 5: Motivation:- Concept; Theories of Motivation: Need Hierarchy Theory, Two Factor theory; Mc Clellands' Theory, Expectancy theory.

Leadership:- Style and Theories of Leadership

Conflict:- Concept; Classification, Resolution of Conflict

Organizational Change:- Concept & Kurt Lewin Theory of Change

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). New York; McGraw Hill.
- Robbins, Judge & Vohra (2018). Organizational Behavior (18th edition).New Delhi: Pearson Education.
- K; A. (2016). Organizational Behaviour (12th edition). New Delhi: Himalaya Publishing House.
- Stephen; P. (2013). Organizational Behaviour (15th edition). New Delhi: Pearson Education.
- Udai; P. (2016). Understanding Organizational Behaviour (4th edition). New Delhi: Oxford Higher Education.

Course Evaluation Criteria:

Instruments	Marks
Mid Term Exam	20
Assignment 1	4
Assignment 2	4
Assignment 3	4
Class Participation (Skill Development)	8
Total Marks- Internal Examination	**40**

Marks Distribution Scheme for final exams: (For 4 Credit Course)*
***will vary as per credits**

Unit	Marks
Mixed evaluation from all units	10
1	10
2	10
3	10
4	10
5	10
Total Marks- External Examination	**60**

Total (Internal Assessment + External) Assessment)	**100**

COURSE OUTLINE (Batch 2025-27)
MBA_BA I Semester

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 understand ability of its proper usage.

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

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: analysing 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 analyse 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-PSO MATRIX							
Course Outcomes	PO1	PO2	PO3	PO4	PSO1	PSO2	PSO3
CO1	3	3	2	1	1	3	0
CO2	3	3	3	2	3	2	0
CO3	3	3	3	2	3	2	1
CO4	2	3	1	3	3	3	2
AVERAGE	2.6	2.6	2	2.2			

Course Mapping:

Local	Regional	National	Global
Y	Y	Y	N

Professional Ethics	Gender	Human Values	Environment & Sustainability
Y	Y	Y	N

Employability	Entrepreneurship	Skill Development
Y	N	Y

Course Pedagogy:

Lecture, Case study, hands on analysis

Course Content:

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 Variables using Excel, Decision Trees-using AI-based tools like Power BI, demand forecasting-using real-time datasets, Regression analysis using time series data-using Excel.

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

SuggestedReadings:

- Samuelson&Marks,"ManagerialEconomics:InternationalStudentsVersion "Wiley, 6th edition, 2014
- Truett&Truett,"ManagerialEconomics",JohnWiley&Sons,8thedition,Singapore,2004
- Samuelson&Nordhus,"Economics",TataMcGraw-HillEdition,16thedition,NewDelhi,1998
- Petersen,LewisandJain,"ManagerialEconomics",PearsonEducation,NewDelhi,2006.
- Hirschey,"EconomicsforManagers",Thompson,NewDelhi,2006
- SumaDamodaran,"ManagerialEconomics",OxfordUniversityPress,2006.

Evaluation Criteria:

Instruments	Marks
Mid Term Exam	20
Assignment 1	4
Assignment 2	4
Assignment 3	4
Class Participation (Skill Development)	8
Total Marks- Internal Examination	**40**

Marks Distribution Scheme for final exams: (For 4 Credit Course)*
***will vary as per credits**

Unit	Marks
Mixed evaluation from all units	10
1	10
2	10
3	10
4	10
5	10
Total	60

Total (Internal Assessment + External) Assessment)	100

COURSE OUTLINE (Batch 2025-27)
MBA_BA I Semester

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

Credits: 04

MBA(BA)103

FINANCIAL REPORTING AND ANALYSIS

Course Objectives

To develop a comprehensive understanding of financial reporting concepts and frameworks, enable the preparation and qualitative evaluation of financial statements in line with national and international standards, and equip learners with analytical tools and techniques for interpreting financial data, assessing financial performance, and understanding regulatory and corporate reporting practices.

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

CO1a: Learn the basic concepts of financial reporting.

CO1b: Understand types of financial statements and additional disclosures need to report by business entity

CO2: Learn basic elements of financial statements.

CO3: Understand and apply financial statement analysis tools for decision making.

CO4: Learn convergence of Indian accounting standards with IFRS.

PO-CO-PSO Matrix:

PO-CO-PSO Matrix							
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2
CO1a	3		2	1	2	2	2
CO1b	3	1	2	2	1	3	3
CO2	2	2	3			3	3
CO3	3	2	3	2	1	3	3
CO4	2		2	3	2	3	3

Course Mapping:

Local	Regional	National	Global
Y	Y	Y	N

Professional Ethics	Gender	Human Values	Environment & Sustainability
Y	Y	Y	N

Employability	Entrepreneurship	Skill Development
Y	N	Y

Course Pedagogy:

Lecture, Case study, hands on analysis, Mini Project

Course Content:

Unit 1: Financial Analysis and reporting: an Introduction

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.

Conceptual Framework- Concept, need and benefits of conceptual framework, ASB's 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

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.

Unit 3: Financial reporting

Financial reporting –Concepts – users, Objectives of financial reporting – Qualitative characteristics of information in financial reporting – basic problems of disclosure – Role of SEBI in IFRS – Statutory disclosures in IFRS – Corporate reporting practices in India Challenges in financial reporting.

Unit 4: Elements of Financial Statements

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

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

Unit 5: Analysis and Interpretation of Financial Statements

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

Ratio Analysis- meaning, advantages, practical problems on different classification of ratios. Use of ratios and financial Statements for industry wise comparison. Analysis of financial reporting by corporate sector.

Suggested 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). (n.p.): philearning Pvt. Ltd.

Course Evaluation Criteria:

Instruments	Marks
Mid Term Exam	20
Assignment 1	4
Assignment 2	4
Assignment 3	4
Class Participation (Skill Development)	8
Total Marks- Internal Examination	**40**

Marks Distribution Scheme for final exams: (For 4 Credit Course)*
***will vary as per credits**

Unit	Marks
Mixed evaluation from all units	10
1	10
2	10
3	10
4	10
5	10
Total	60

Total (Internal Assessment + External) Assessment)	100

COURSE OUTLINE (Batch 2025-27)
MBA_BA I Semester

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

Credits: 04

MBA(BA)104
INTRODUCTION TO BUSINESS ANALYTICS AND DATA SCIENCE

Course Objectives:

The course aims to provide the students with a comprehensive study of various application areas of business analytics through relevant examples. The main objective is to provide necessary understanding about business analytics to tackle real life problems.

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

CO1a Understand the role of business analytics for Business Decision making

CO1b Understand the role of data science in solving business problem and Data science project life cycle to prepare data

CO2 Understand and apply data mining task and techniques for better decision making

CO3 Apply and analyze machine learning concept various data mining task and techniques for better decision making

CO4 Analyze the application of business analytics in different business domain

PO-CO-PSO Matrix:

COs	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1a	2	-	3	3	3	3	1	1
CO1b	2	-	3	3	3	3	1	1
CO2	2	2	3	3	3	3	1	1
CO3	2Course	3	3	3	3	3	1	1
CO4	2	-	2	3	2	3	2	1

Course Mapping:

Local	Regional	National	Global
Y	Y	Y	Y

Professional Ethics	Gender	Human Values	Environment & Sustainability
Y	Y	Y	N

Employability	Entrepreneurship	Skill Development
Y	N	Y

Course Pedagogy:

Lecture, Case study, hands on analysis

Course Content:

UNIT 1: 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: 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: 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: 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: Application of Business Analysis:
Retail Analytics, Marketing Analytics, Financial Analytics, Healthcare Analytics, Supply Chain Analytics.

Suggested Readings:

- 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

Course Evaluation Criteria:

Instruments	Marks
Mid Term Exam	20
Assignment 1	4
Assignment 2	4
Assignment 3	4
Class Participation (Skill Development)	8
Total Marks- Internal Examination	**40**

Marks Distribution Scheme for final exams: (For 4 Credit Course)*
***will vary as per credits**

Unit	Marks
Mixed evaluation from all units	10
1	10
2	10
3	10
4	10
5	10
Total	**60**

Total (Internal Assessment + External) Assessment)	**100**

COURSE OUTLINE (Batch 2025-27)
MBA_BA I Semester

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

Credit– 04

MBA (BA) –105
BUSINESS ENVIRONMENT

Course Objective:

The main objective of this course is to equip students with a comprehensive understanding of the diverse and dynamic **macro-environmental forces** (economic, political, legal, technological, social, and global) that shape the business landscape in India, enabling them to **analyze their impact** and formulate effective business strategies.

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

CO1a: Analyze core **environmental factors** and apply **scanning techniques** for business decision-making.

CO1b: Evaluate the impact of key **industrial and legal policies** (e.g., Competition Act, FEMA, SEBI) on Indian businesses.

CO2: Assess the influence of **monetary, fiscal, EXIM policies** and **technological advancements** on the Indian economy.

CO3: Understand how **political structures, social responsibilities**, and **MSME policies** shape the business landscape.

CO4: Explain the roles of **international economic organizations** (IMF, WTO, World Bank) and **global financial flows** (FDI, FII) in India.

PO-CO-PSO Matrix:

(COs)	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1a	2	2	3	2	2	2	2	1
CO1b	3	2	1	3	1	2	3	1
CO2	2	2	2	2	2	2	3	2
CO3	3	2	2	2	3	2	3	2
CO4	2	2	3	2	1	2	2	1

Course Mapping:

Local	Regional	National	Global
Y	Y	Y	Y

Professional Ethics	Gender	Human Values	Environment & Sustainability
Y	Y	Y	Y

Employability	Entrepreneurship	Skill Development
Y	N	N

Course Pedagogy:

Lecture, Case study, hands on analysis

Course Content:

Unit 1: An Overview of Business Environment:

Concept of Business Environment- Definition, Characteristics. Environmental factors affecting decision making of the business Firm-Environmental Scanning: - Meaning, Scope and Process. Nature of the economy, structure of the economy, economic policies.

Unit 2: Industrial & Legal Environment

Industrial policy in India, 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: Economic and Technological Environment:

Major Changes; Monetary and Fiscal Policies, Exim (Latest policy), Depository System in India; RBI-Roles, Functions. Technological Environment: Features, Its impact on Business, Restraints on Technological Growth.

Unit 4: Political and Social Environment:

Concept and Meaning of Political Environment, Political Institutions: Legislature, Executive, Judiciary, And Its Impact on Business. Social Environment: Meaning, Business and Ethics, Social Responsibility of Business-Its impact on Business Decisions

Unit 5: Other Contemporary Topics:

International Monetary Fund; WTO and World Bank. MSME in India. FDI in India: trends and pattern, FII, cross-border M&As. Trade balance and BOP.

Suggested Readings:

- Cherunilam, F. (2010). Business Environment - Text and Cases. Himalaya Publishing House
- House. Paul, J. (2010). Business environment. Tata McGraw-Hill Education.
- Shaikh, S. (2010). Business Environment (2/E ed.). Pearson Education India.
- Aswathappa, K., (2000), Essentials of Business Environment, 7th edition, Himalaya Publishing House.
- Gupta C. B., (2008), Business Environment, 4th edition, Sultan Chand.

Course Evaluation Criteria:

Instruments	Marks
Mid Term Exam	20
Assignment 1	4
Assignment 2	4
Assignment 3	4
Class Participation (Skill Development)	8
Total Marks- Internal Examination	**40**

Marks Distribution Scheme for final exams: (For 4 Credit Course)*
***will vary as per credits**

Unit	Marks
Mixed evaluation from all units	10
1	10
2	10
3	10
4	10
5	10
Total	60

Total (Internal Assessment + External) Assessment)	**100**

COURSE OUTLINE (Batch 2025-27)
MBA_BA I Semester

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

Credit– 04

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

CO1a: Understand the basics of descriptive and inferential statistics and present appropriate graphical statistics for different types of data.

CO1b: Apply basic descriptive statistics like central value, dispersion, skewness and kurtosis for different types of data.

CO2: Use correlation and regression analyses to determine the relationships between the variables.

CO3: Demonstrate and understand concepts relating to probability and its distribution.

CO4: Conduct and interpret a variety of hypothesis tests to aid decision making in a business context.

PO-CO-PSO Matrix:

COs	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1a	2	3	3	3	3	3	3	3
CO1b	3	3	2	1	2	3	2	2
CO2	3	3	2	1	2	3	2	2
CO3	3	3	2	1	2	3	2	2
CO4	3	3	3	3	3	3	3	3

Course Mapping:

Local	Regional	National	Global
Y	Y	Y	Y

Professional Ethics	Gender	Human Values	Environment & Sustainability
N	N	N	Y

Employability	Entrepreneurship	Skill Development
Y	N	Y

Course Pedagogy:

Lecture, Case study, hands on analysis

Course Content:

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

Course Evaluation Criteria:

Instruments	Marks
Mid Term Exam	20
Assignment 1	5
Assignment 2	5
Assignment 3	5
Class Participation (Skill Development)	5
Total Marks- Internal Examination	**40**

Marks Distribution Scheme for final exams: (For 4 Credit Course) *

***Will vary as per credits**

Unit	Marks
1 (Short Answers)	10
2	10
3	10
4	10
5	10
6	10
Total Marks- End Examination	**60**

Total (Internal Assessment + External Assessment)	**100**

COURSE OUTLINE (Batch 2025-27)
MBA_BA I Semester

MBA BA – I SEMESTER Industry Readiness- I PAPER CODE: MBA_BA –107	Max. Marks: 50 Min. Marks: 18

Credits: 2

MBA(BA)107
INDUSTRY READINESS- I

Course Objectives:

The course aims to equip students with essential professional and analytical skills by enhancing their personal and organizational awareness through SWOT analysis, grooming, and non-verbal communication for effective physical and virtual presence.

Additionally, the course develops quantitative aptitude and problem-solving abilities by applying mathematical techniques to real-life scenarios involving arithmetic and business-related problems.

Course Outcomes:

CO1a: **Analyze** personal and organizational SWOTs, and **demonstrate** appropriate body language, grooming, and presentation skills for effective physical and virtual presence.

CO1b: **Understand** and **apply** professional communication practices within an organizational hierarchy through effective use of emails, phone calls, WhatsApp messages, and formal greetings.

CO2: **Apply** mathematical techniques to **solve** quantitative problems involving number systems, LCM, HCF, simplification, and profit & loss.

CO3: **Demonstrate** problem-solving abilities by accurately **calculating** and **interpreting** data related to percentages, interest, mixtures, partnership, and averages in real-life contexts.

CO4: **Interpret** patterns and relationships in logical reasoning problems such as series, coding-decoding, analogies, and blood relations to **enhance** analytical and reasoning skills.

CO/PO Matrix:

CO/PO/ PSO Matrix								
COs \ POs & PSOs	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1 (A)	1	1	2	1	2	2	2	1
CO1 (B)	2	2	2	1	2	2	2	1
CO2	3	3	2	1	1	3	1	1
CO3	3	3	3	2	1	3	2	1
CO4	3	3	3	2	1	3	1	1

Course Mapping:

Local	Regional	National	Global
Y	Y	Y	Y

Professional Ethics	Gender	Human Values	Environment & Sustainability
Y	N	N	N

Employability	Entrepreneurship	Skill Development
Y	N	Y

Course Pedagogy:
Lecture, Case study, hands on analysis
Course Content:

UNIT-1 SWOT of candidate and organization, Appearance, Content, Role of Body Language (Gestures, Postures) during online, offline presence.

UNIT-2 Communication in Organization: Basics of Email Writing (Seniors, Colleagues and Juniors), Telephone etiquettes, Text Messages, Wats app messages, Do's and Don'ts while communicating in hierarchy, Greeting Seniors, Juniors, few sentences and idioms, phrases, salutations for making communication effective.

UNIT-3 **Quantitative Ability:**Guesstimation, Number System, LCM and HCF, Decimal Fractions, Simplification, Square and Cube roots, Profit & Loss.

UNIT-4 **Quantitative Ability:** Ratio, Proportion & Percentage, Simple & Compound Interest, Mixture & Allegation, Partnership and Average.

UNIT-5 **Logical reasoning:** Number & letter series, Coding & Decoding, Analogies, Blood relation.

Suggested Readings:

- **Roman, Kenneth and Raphaelson Joel.** Writing that Works. Collins.
- **Jones, Phil.M.** Exactly What to Say. Page Two.
- **Verma,S.K.(2023).** Quantitative Aptitude Quantum CAT, Arihant Publication.
- **Mishra. R.K.(2020).** Tricky Reasoning, Herald Publication.
- **Khattar, D. (2019).** Quantitative Aptitude. Pearson Publication.
- **Mishra, R.K.(2019).** Tricky Mathematics, Herald Publication.
- **Agrawal,R.S.(2017).** Quantitative Aptitude. S.Chand Publication.

Course Evaluation Criteria:

Instruments	Marks
Assignment 1 (GD)	5
Assignment 2 (Role Play)	5
MCQ Test 1	5
MCQ Test 2	5
MindQuest	5
Internal Assessment #	**25**
External Assessment #	**25**
Total	**50**

 # Students will prepare a file on the prescribed syllabus for both internal and external assessment which has to be duly submitted to the subject teacher/facilitator within stipulated time

COURSE OUTLINE (Batch 2025-27)
MBA_BA I Semester

MBA_BA I Semester INTRODUCTION TO PYTHON FOR BUSINESS ANALYTICS PAPER CODE: MBA_BA –108	Total Marks: 50 Min. Marks: 09 External :25 Internal: 25

Credits: 02

MBA(BA)108

INTRODUCTION TO PYTHON FOR BUSINESS ANALYTICS

Course Objective:

To develop foundational programming skills in Python with a focus on control structures, data structures, file handling, and using Pandas for effective business data analysis.

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

CO1a: Understand the basic concepts of programming and identify various data types, variables, and operators in Python

CO1b: Apply conditional statements, loops, and functions to solve simple programming problems.

CO2: Analyze the use of different data structures in Python and implement basic data operations using Pandas Series and DataFrames.

CO3: Develop programs to read from and write to text and CSV files, demonstrating file handling skills in real-world contexts.

CO4: Evaluate and manipulate DataFrames using advanced Pandas operations to extract insights and perform data analysis tasks.

PO-CO-PSO Matrix:

COs	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1a	3	2	2	-	-	3	-	-
CO1b	2	3	2	-	-	3	-	-
CO2	2	3	2	-	-	3	2	-
CO3	2	3	2	-	-	3	2	-
CO4	2	3	3	2	-	3	2	2

Course Mapping:

Local	Regional	National	Global
Y	Y	Y	Y

Professional Ethics	Gender	Human Values	Environment & Sustainability
N	N	N	N

Employability	Entrepreneurship	Skill Development
Y	N	Y

Course Pedagogy:

Lecture, Practical, hands on analysis.

Course Content:

1. **Programming Logic**: Introduction to Programming, Python Types, Python IDEs, Basic syntax, Keywords, Comments, Data types, Variables, Operators
2. **Control Structures and Functions**: Conditional Execution, Iterations, Statements: break, continue, Functions: User define & Built-in functions.
3. **Data Structures:** Lists, Tuples, Sets, Dictionaries, Basic operations and methods.
4. **File Handling**: Files basics and types: text, binary & CSV, Reading and Writing Text and CSV file, working with CSV files using built-in modules.
5. **Pandas for Business Analytics**: Introduction to Pandas library, Series and DataFrames, Basic operations: selection, filtering, summary statistics, Groupby and pivot.

NOTE: The file will be prepared in accordance with the syllabus.

Suggested Readings:

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

Course Evaluation Criteria:

Instruments	Marks
Assignment 1 (Unit 1 & 2)	5
Assignment 2 (Unit 3)	5
Assignment 3 (Unit 4)	5
Assignment 4 (Unit 5)	5
Internal Viva	5
Total Marks- Internal Examination	**25**

Marks Distribution Scheme for final exams: (For 2 Credit Course)*
***will vary as per credits**

Unit	Marks
External Viva	25
Total	25

Total (Internal Assessment + External) Assessment)	50

COURSE OUTLINE (Batch 2025-27)
MBA_BA II Semester

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

Credits: 04

MBA(BA)201
MARKETING MANAGEMENT

Course Objectives:

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

- **CO1a-** Understand the Various concept related to Marketing management and Marketing environment
- **CO1b-** Illustrate the various concept related to marketing Segmentation, targeting and positioning
- **CO2-** Analyze the concept of Marketing mix and understand role of distribution channels in Marketing
- **CO3-** Comprehend the role of promotion mix in marketing.
- **CO4-** Evaluate and Identify the Various aspect of digital marketing and Retailing

PO-CO-PSO Matrix:

COs	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1a	3	2	3	2	1	3	3	1
CO1b	3	2	3	2	1	3	3	1
CO2	3	3	2	2	1	3	3	1
CO3	2	2	3	2	1	2	2	1
CO4	2	3	3	3	2	3	3	2

Course Mapping:

Local	Regional	National	Global
Y	Y	Y	N

Professional Ethics	Gender	Human Values	Environment & Sustainability
Y	Y	Y	N

Employability	Entrepreneurship	Skill Development
Y	Y	Y

Course Pedagogy:

Lecture, Case study, hands on analysis

Course Content:

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 Planning - 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.

Suggested Readings:

- 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
- 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

Course Evaluation Criteria:

Instruments	Marks
Mid Term Exam	20
Assignment 1	4
Assignment 2	4
Assignment 3	4
Class Participation (Skill Development)	8
Total Marks- Internal Examination	**40**

Marks Distribution Scheme for final exams: (For 4 Credit Course)*
***will vary as per credits**

Unit	Marks
Mixed evaluation from all units	10
1	10
2	10
3	10
4	10
5	10
Total	**60**

Total (Internal Assessment + External) Assessment)	**100**

COURSE OUTLINE (Batch 2025-27)
MBA_BA II Semester

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

Credits: 04

MBA(BA)202
OPERATIONS AND SUPPLY CHAIN MANAGEMENT

Course Objectives:

This course provides insights into operations and supply chain management, focusing on planning, forecasting, inventory, and logistics. It emphasizes analytical techniques and IT applications for efficient decision-making in modern business operations.

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

CO1: Understand the fundamental concepts of operations and supply chain management

CO2: Apply forecasting techniques and aggregate planning strategies to solve real-world problems.

CO3: Analyze and interpret inventory control techniques and supply chain flows to optimize resource utilization and inventory levels.

CO4: Evaluate network design decisions, logistics subsystems, and vendor performance using mathematical and decision-support tools.

CO5: Design technology-integrated supply chain solutions by incorporating IT frameworks, risk management practices, and relationship management strategies.

PO-CO-PSO Matrix:

CO \ PO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	3	2	2	2	1	2	3	1
CO2	3	3	2	1	1	3	2	1
CO3	3	3	2	2	1	3	2	1
CO4	3	3	2	3	2	3	2	2
CO5	2	2	3	3	3	2	3	3

Course Mapping:

Local	Regional	National	Global
Y	Y	Y	N

Professional Ethics	Gender	Human Values	Environment & Sustainability
Y	N	N	Y

Employability	Entrepreneurship	Skill Development
Y	Y	Y

Course Pedagogy:

Lecture, Case study, hands on analysis

Course Content:

Unit 1: Introduction & Capacity Planning

An overview, Definition of operations management, Responsibilities of Operations Manager, Plant Location, Process selection and design, Layout Planning.
Production Planning techniques, Capacity management, Line of balance, scheduling types and principles.
(Numerical problems on deciding plant location through Centroid Method)

Unit 2: Forecasting & Aggregate Planning

Forecasting as a planning tool, Forecasting types and methods (Qualitative and Quantitative).
Introduction of Aggregate Planning, Techniques for Aggregate Planning, Aggregate Planning in Services, Disaggregating the aggregate plan.
(Numerical problems on Quantitative methods of Forecasting)

Unit 3: Inventory Management & Supply Chain 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.
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 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 aspart 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.
- ReghuramG. (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, 1stEdition Macmillan.

Course Evaluation Criteria:

Instruments	Marks
Mid Term Exam	20
Assignment 1	4
Assignment 2	4
Assignment 3	4
Class Participation (Skill Development)	8
Total Marks- Internal Examination	**40**

Marks Distribution Scheme for final exams: (For 4 Credit Course)*
*will vary as per credits

Unit	Marks
Mixed evaluation from all units	10
1	10
2	10
3	10
4	10
5	10
Total	60

Total (Internal Assessment + External) Assessment)	**100**

COURSE OUTLINE (Batch 2025-27)
MBA_BA II Semester

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

Credits: 04

MBA(BA)203
CORPORATE FINANCE

Course Objectives:

This course aims to develop a foundational understanding of financial management principles, including financing, investment, dividend, and working capital decisions.

It equips students with analytical tools and techniques for evaluating financial alternatives and maximizing shareholder wealth.

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

CO1a: Understand the fundamentals, various models of Corporate Finance.

CO1b: Analyze capital structure theories and evaluate financing decisions using leverage and EBIT-EPS analysis

CO2: Apply and compare various aspect capital budgeting techniques for analyzing long-term projects.

CO3: Comprehend various dividend models and its applicability.

CO4: Familiar with the concept of working capital and its management.

PO-CO-PSO Matrix:

COs	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1a	3	2	2	0	0	3	2	0
CO1b	3	3	2	0	0	3	2	0
CO2	3	2	3	0	0	2	0	0
CO3	2	0	0	2	0	0	2	0
CO4	2	0	0	3	2	0	3	2

Course Mapping:

Local	Regional	National	Global
Y	Y	Y	Y

Professional Ethics	Gender	Human Values	Environment & Sustainability

Y	Y	Y	Y

Employability	Entrepreneurship	Skill Development
Y	N	Y

Course Pedagogy:
Lecture, Case study, hands on analysis
Course Content:

UNIT 1: Nature of Financial Management: Finance and related disciplines; Scope of Financial Management; Profit Maximization, Wealth Maximization – Traditional and Modern Approach; Functions of finance – Finance Decision, Investment Decision, Dividend Decision; Objectives of Financial Management; Organisation of finance function; Concept of Time Value of Money- present value, future value, annuity, growing annuity, perpetuity, growing perpetuity.

UNIT 2: Financing Decisions: Capital Structure, Theories - Net Income approach, Net Operating Income approach, Traditional approach, Modigliani Miller (MM) model; Determining the optimal capital structure, Leverage analysis and EBIT-EPS Analysis: Concept of leverage, Types of leverage: Operating leverage, Financial leverage, Combined leverage; EBIT-EPS Analysis.

Cost of Capital: Meaning and concept, Explicit and Implicit costs; Measurement of cost of capital- Cost of debt; Cost of perpetual debt; Cost of Equity Share; Cost of Preference Share; Cost of Retained Earning; Computation of over-all cost of capital based on Historical and Market weights (WACC).

UNIT 3: Investment Decisions: Capital Budgeting -; Nature and meaning of capital budgeting; Principles and Process; Estimation of relevant cash flows and terminal value; Evaluation techniques – Payback period, Accounting Rate of Return, Net Present Value, Internal Rate of Return, Profitably Index Method, Payback Period, NPV vs. IRR.

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 V: 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

Course Evaluation Criteria:

Instruments	Marks
Mid Term Exam	20
Assignment 1	4
Assignment 2	4
Assignment 3	4
Class Participation (Skill Development)	8
Total Marks- Internal Examination	**40**

Marks Distribution Scheme for final exams: (For 4 Credit Course)*
***will vary as per credits**

Unit	Marks
Mixed evaluation from all units	10
1	10
2	10
3	10
4	10
5	10
Total	60

Total (Internal Assessment + External) Assessment)	**100**

COURSE OUTLINE (Batch 2025-27)
MBA_BA II Semester

Machine Learning & Application PAPER CODE: MBA (BA) 204	Max. Marks: 100 Min. Marks: 35 External 60 Internal: 40

Credits: 04

MBA(BA)204
MARKETING MANAGEMENT

Course Objectives

This course introduces the fundamentals of machine learning, covering key techniques like classification, regression, clustering, decision trees, neural networks, and Bayesian learning. It aims to equip students with the theoretical understanding and practical skills to design and apply learning algorithms to real-world problems.

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

CO1a: Gain knowledge about basic concepts of Machine Learning.

CO1b: Identify machine learning techniques suitable for a given problem.

CO2: Understand decision tree and ANN techniques for solving the real problem in machine learning.

CO3: Apply the bayes algorithms to in business problem.

CO4: Understand the unsupervised learning techniques and their algorithm for solve the business problem.

PO-CO-PSO Matrix:

COs	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1a	2	2	2	1	1	2	1	1
CO1b	3	3	2	1	2	3	2	2
CO2	3	3	2	1	2	3	2	2
CO3	3	3	2	1	2	3	2	2
CO4	3	3	2	1	2	3	2	2

Course Mapping:

Local	Regional	National	Global
Y	Y	Y	N

Professional Ethics	Gender	Human Values	Environment & Sustainability

Y	Y	Y	N

Employability	Entrepreneurship	Skill Development
Y	N	Y

Course Pedagogy:

Lecture, Case study, hands on analysis

Course Content:

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).

Reference Books:

- 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

Course Evaluation Criteria:

Instruments	Marks
Mid Term Exam	20
Assignment 1	4
Assignment 2	4
Assignment 3	4

Class Participation (Skill Development)	8
Total Marks- Internal Examination	**40**

Marks Distribution Scheme for final exams: (For 4 Credit Course)*
***will vary as per credits**

Unit	Marks
Mixed evaluation from all units	10
1	10
2	10
3	10
4	10
5	10
Total	60

Total (Internal Assessment + External) Assessment)	**100**

COURSE OUTLINE (Batch 2025-27)
MBA_BA II Semester

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

Credit: 4

MBA(BA)205
HUMAN RESOURCE MANAGEMENT

Course Objectives:

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

CO1a: Develop an understanding of the concepts of HRM and essential skill sets required to become HR professional.

CO1b: Contribute to the implementation and evaluation of plans related to employee recruitment, selection, training, retention, and appraisal processes in an organization.

CO2: Integrate the knowledge of HR concepts to take the best managerial decisions.

CO3: Design rationally the salary and compensation structure.

CO4: Create pay slip, offer letter, develop and use HR Metrics and write Job Advertisements.

PO-CO-PSO Matrix:

COs	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1a	3	3	2	2	2	2	3	1
CO1b	3	3	3	2	1	3	3	2
CO2	3	3	3	2	2	2	3	2
CO3	2	3	3	3	2	3	3	2
CO4	2	2	2	2	1	3	2	3

Course Mapping:

Local	Regional	National	Global
Y	Y	Y	N

Professional Ethics	Gender	Human Values	Environment & Sustainability
Y	N	Y	N

Employability	Entrepreneurship	Skill Development
Y	Y	N

Course Pedagogy:

Lecture, Case study, hands on analysis EML's.

Course Content:

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.

Course Evaluation Criteria:

Instruments	Marks
Mid Term Exam	20
Assignment 1	4
Assignment 2	4
Assignment 3	4
Class Participation (Skill Development)	8
Total Marks- Internal Examination	**40**

Marks Distribution Scheme for final exams: (For 4 Credit Course)*
***will vary as per credits**

Unit	Marks
Mixed evaluation from all units	10
1	10
2	10
3	10
4	10
5	10
Total	60

COURSE OUTLINE (Batch 2025-27)
MBA_BA II Semester

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

Credit: 4

MBA (BA) –206
DECISION SCIENCE

Course Objectives:

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

CO1a: Know and understand the various techniques of Decision making Environments.

CO1b: Define, Sketch and Apply LP technique to translate a real-world problem.

CO2: Demonstrate and Solve game and sequencing problems.

CO3: Understand the concept of Queuing System and identify variations using SQC tools.

CO4: Familiar with the concept of replacement theory and CPM PERT.

PO-CO-PSO Matrix:

COs	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1a	3	2	3	3	2	3	3	2
CO1b	3	2	3	2	2	3	2	2
CO2	3	2	3	2	2	3	2	2
CO3	3	2	3	2	2	3	2	2
CO4	3	2	3	2	2	3	2	3

Course Mapping:

Course Mapping:

Local	Regional	National	Global
Y	Y	Y	Y

Professional Ethics	Gender	Human Values	Environment & Sustainability
N	N	N	Y

Employability	Entrepreneurship	Skill Development
Y	N	Y

Course Pedagogy:
Lecture, Case study, hands on analysis
Course Content:

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.

Course Evaluation Criteria:

Instruments	Marks
Mid Term Exam	20
Assignment 1	4
Assignment 2	4
Assignment 3	4
Class Participation (Skill Development)	8
Total Marks- Internal Examination	**40**

Marks Distribution Scheme for final exams: (For 4 Credit Course)*

**will vary as per credits*

Unit	Marks
Mixed evaluation from all units	10
1	10
2	10
3	10
4	10
5	10
Total	**60**

Total (Internal Assessment + External) Assessment)	**100**

COURSE OUTLINE
MBA_BA II Semester

MBA_BA II Semester Machine Learning Using R PAPER CODE: MBA (BA) 207	Max. Marks: 50 Min. Marks: 18 External : 25 Internal: 25

Credits: 02

Course Objectives:

Develop comprehensive proficiency in R programming for business analytics by mastering modular coding through functions and object-oriented programming, efficiently preparing and managing data using R and big data tools, conducting statistical data analysis, and building predictive models with machine learning techniques.

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

CO1a: Acquire proficiency in R programming, encompassing constructs, control statements, and string functions, and apply this knowledge to effectively employ tools, techniques, and algorithms for solving business problems.

CO1B: Develop and use user-defined functions and apply object-oriented programming concepts in R to create reusable and modular code.

CO2: Import, manipulate, transform, and clean data using R, and prepare datasets for statistical analysis and visualization.

CO3: Perform statistical analysis in R using techniques such as descriptive statistics, hypothesis testing, PCA, and probability distributions.

CO4: Apply regression modeling and implement machine learning algorithms in R for predictive data analysis and decision-making.

PO-CO-PSO Matrix:

	MBA -BA- 2nd Sem- Machine Learning - MBA -BA -207							
COs \ POs & PSOs	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1a	3	2	2	1	2	3	2	2
CO1b	3	3	2	2	2	2	3	1
CO2	3	3	3	2	2	1	1	2
CO3	2	3	3	2	2	3	2	3
CO4	3	2	3	3	3	3	3	2

Course Mapping:

Local	Regional	National	Global
Y	Y	Y	N

Professional Ethics	Gender	Human Values	Environment & Sustainability
Y	Y	Y	N

Employability	Entrepreneurship	Skill Development
Y	N	Y

Course Pedagogy:

Lecture, Case study, hands on analysis

Course Content:

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.
- Strick Land, J.S., Predictive analytics using R, Lulu Inc.

Suggested Reading

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

Course Evaluation Criteria:

Internal	Marks
Practical Assignment 1	4
Assignment 2	5
Class Participation (Skill Development)	6+7+3
Total Marks- Internal Examination	**25**

Marks Distribution Scheme for final exams: (For 4 Credit Course)*
***will vary as per credits**

External	Marks
Final External Viva	25
Total	**25**

Total (Internal Assessment + External) Assessment)	**50**

COURSE OUTLINE (Batch 2025-27)
MBA_BA II Semester

MBA_BA II Semester DATABASE AND SQL LAB PAPER CODE: MBA BA 208	Max. Marks: 50 Min. Marks: 18 External 25 Internal: 25

Credits: 02

MBA(BA)208
DATABASE AND SQL LAB

Course Objectives:

This course aims to equip students coming from diverse streams to understand Data models and extract data meaningfully by using SQL Query.

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

CO1a: Understand the concept of Database Management System and ER-Model.

CO1b: Understand relational databases using Oracle/MS-Access/MySql.

CO2: Understand and apply basic concepts of Select statement in Structured Query Language (SQL).

CO3: Apply the Structured Query Language (SQL) to extract and derived desired data.

CO4: Understand and apply joins to retrieve data from multiple tables. Understand and apply nested select statement.

PO-CO-PSO Matrix:

COs	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1a	2	3	2	2	3	2	2	3
CO1b	2	3	2	2	3	3	3	3
CO2	2	3	2	3	2	3	2	3
CO3	2	3	2	3	2	2	3	3
CO4	2	3	3	3	3	2	3	3

Course Mapping:

Local	Regional	National	Global
Y	Y	Y	Y

Professional Ethics	Gender	Human Values	Environment & Sustainability
Y	Y	Y	N

Employability	Entrepreneurship	Skill Development
Y	Y	Y

Course Pedagogy:
Lecture, Example, Hands on Analysis
Course Content:

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 V: 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

Suggested Readings:

- Mihiranga Nisal (2022). Power BI Data Modeling Delhi: BPB Publication.
- Sinha Chandraish (2024). Mastering Power BI. Delhi: BPB Publication

Course Evaluation Criteria:

Instruments	Marks
File	6
Assignment 1	6
Assignment 2	8
Assignment 3	5
Total Marks- Internal Examination	**25**

Marks Distribution Scheme for final exams: (For 2 Credit Course)*
***will vary as per credits**

Unit	Marks
External Viva	25
Total	**25**

Total (Internal Assessment + External) Assessment)	**50**

COURSE OUTLINE
MBA BA-II Semester

MBA_BA II SEMESTER PROJECT- DATA ANALYSIS WITH PYTHON PAPER CODE: MBA_BA –209	Max. Marks: 100 Min. Marks: 35 External :50 Internal: 50

Credits: 02

Course Objectives: To equip students with foundational skills in Python programming, data preprocessing, visualization, and basic predictive analytics for solving real-world business problems through data-driven insights.

Course Outcome: After the completion of this subject the students will be able to

CO1a Understand the basics of Python programming and its application in business analytics, including environment setup, syntax, and use of NumPy and Pandas.
CO1b Apply data handling and preprocessing techniques using Pandas to prepare datasets for analysis.
CO2 Create and interpret various data visualizations using Python libraries like Matplotlib for informed business decision-making.
CO3 Perform basic statistical analysis and implement introductory predictive models for business insights using Python.
CO4 Analyze real-world datasets through a capstone project to generate actionable insights and present data-driven recommendations.

PO-CO-PSO Matrix:

CO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1:	3	3	2	1	1	3	2	2
CO2:	3	3	3	1	1	3	2	2
CO3:	3	3	3	2	1	3	2	2
CO4:	3	3	3	2	1	3	2	2
CO5:	3	3	3	2	2	3	3	3

Course Mapping:

Local	Regional	National	Global
Y	Y	Y	N

Professional Ethics	Gender	Human Values	Environment & Sustainability
N	N	N	N

Employability	Entrepreneurship	Skill Development
Y	Y	Y

Course Pedagogy:
Lecture, practical, hands on analysis

Course Content:

1: Introduction to Python for Business Analytics

- Overview of Python in business analytics
- Setting up Python environment (IDLE/Spyder)
- Basic Python syntax: Variables, data types, loops, and functions
- Introduction to NumPy and Pandas for data handling

2: Data Handling and Preprocessing

- Working with Pandas: Series & DataFrames
- Importing/exporting data (CSV, Excel)
- Data cleaning: Handling missing values and duplicates
- Data transformation: Sorting, filtering, and grouping

3: Data Visualization for Decision Making

- Importance of data visualization in business
- Matplotlib: Creating bar charts, pie charts, line graphs, and histograms

4: Statistical Analysis with Python

- Descriptive statistics: Mean, median, mode, standard deviation
- Introduction to Predictive Analytics
- Introduction to machine learning in business
- Implementing simple predictive models in Python

5: Capstone Project & Case Study

- Analyzing a real-world dataset using Python
- Generating insights and recommendations

Suggested Readings:

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

Course Evaluation Criteria:

Instruments	Marks
Internal Viva	50
Total Marks- Internal Examination	**50**

Marks Distribution Scheme for final exams: (For 4 Credit Course)*

**will vary as per credits*

Unit	Marks
External Viva	50
Total	50

Total (Internal Assessment + External) Assessment)	**100**

COURSE OUTLINE (Batch 2025-27)
MBA BA-II SEMESTER

MBA BA-II SEMESTER **Industry Readiness–II** **PAPER CODE: MBA_BA –210**	**Max. Marks: 50** **Min. Marks: 18**

Credits: nil

Course Objectives:

The course aims to prepare students for professional readiness by developing their ability to create customized job application documents such as resumes and CVs, and by enhancing their communication and critical thinking skills for effective participation in group discussions and interviews. It further equips learners with the tools and techniques required to confidently handle various interview formats using the STAR method and best practices.

In addition, the course strengthens quantitative aptitude through the application of mathematical concepts to real-life problems and fosters analytical thinking and decision-making through structured logical reasoning exercises.

Course Outcomes:

CO1a **Understand** and **differentiate** between Curriculum Vitae and Resume formats, and **develop** personalized documents tailored to specific job profiles.

CO1b **Demonstrate** effective communication strategies and **apply** structured thinking to participate confidently in group discussions.

CO2 **Evaluate** interview situations (online, offline, telephonic) and **formulate** appropriate responses using the STAR method, along with pre- and post-interview best practices.

CO3 **Solve** real-life quantitative aptitude problems related to speed, time, distance, geometry, and age using accurate mathematical methods.

CO4 **Analyze** logical reasoning problems such as seating arrangements, mathematical operations, and directional puzzles to enhance decision-making and problem-solving skills.

CO-PO-PSO Matrix:

CO/PO/PSO Matrix								
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1a	2	1	2	1	2	2	1	2
CO1b	2	1	3	2	2	2	1	2
CO2	2	2	3	2	3	2	2	3
CO3	3	3	2	1	1	3	2	1
CO4	3	3	3	1	1	3	2	1

Course Mapping:

Local	Regional	National	Global
Y	Y	Y	Y

Professional Ethics	Gender	Human Values	Environment & Sustainability
Y	N	N	N

Employability	Entrepreneurship	Skill Development
Y	N	Y

Course Pedagogy:
Lecture, Case study, hands on analysis
Course Content:

UNIT-1 Curriculum Vitae / Resume preparation

UNIT-2 Cracking Group Discussions

UNIT-3 Interview preparation- Online (Through Google Meet, Cisco, Webex, Zoom) Off line and Telephonic Interviews. Pre and Post Interview preparation, Do's and Don'ts of appearing in an interview, STAR Method, Evaluation parameters.

UNIT-4 Quantitative Ability: Speed, time & Distance, Boats and Streams, Time and work & Problem on Age. Simple Geometry, Area, Volume & Surface area

UNIT-5 Logical reasoning: Mathematical operations, Logical sequence of word, Seating Arrangement and Direction.

Suggested Readings:

- ***Roman, Kenneth and Raphaelson Joel.*** *Writing that Works. Collins.*
- ***Jones, Phil.M.*** *Exactly What to Say. Page Two.*
- ***Ryan, Robin.*** *60 seconds and you're hired. Penguin Books.*
- ***Verma,S.K.(2023).*** *Quantitative Aptitude Quantum CAT, Arihant Publication.*
- ***Mishra. R.K.(2020).*** *Tricky Reasoning, Herald Publication.*
- ***Khattar, D. (2019).*** *Quantitative Aptitude. Pearson Publication.*
- ***Mishra, R.K.(2019).*** *Tricky Mathematics, Herald Publication.*
- ***Agrawal,R.S.(2017).*** *Quantitative Aptitude. S.Chand Publication.*

Course Evaluation Criteria:

Instruments	Marks
Assignment 1 (Preparation of CV/Resume)	10
Assignment 2 (GD)	10
Assignment 3 (Job Quest Viva)	10
MCQ Test	10
Mind Quest	10
Internal Assessment#	**50**
Total	**50**

 # Students will prepare a file on the prescribed syllabus for both internal and external assessment which has to be duly submitted to the subject teacher/facilitator within stipulated time.

COURSE OUTLINE (Batch 2025-27)
MBA_BA III Semester

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

Credits: 04

MBA(BA)301
BIG DATA ANALYTICS

Course Objectives:

This course provides an overview of the Big Data platform with a focus on Apache Hadoop, including its ecosystem, HDFS architecture, and the fundamentals of MapReduce. It aims to help students understand the concepts and practical applications of big data technologies for effective data processing and management.

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

CO1a: Understand Big Data and its Business Implications

CO1b: Elaborate the components of Hadoop and Hadoop Eco-System

CO2: Demonstrate the Process Data on Hadoop Distributed File System

CO3: Explain Job Execution in Hadoop Environment

CO4: Analyse Big Data Solutions using Spark

PO-CO-PSO Matrix:

MBA (BA) -301, Big Data Analytics- CO,PO and PSO's Mapping

COs \ POs & PSOs	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1a	3	2	3	0	1	3	3	2
CO1b	1	2	3	2	0	1	3	2
CO2	1	2	3	0	2	0	3	3
CO3	2	0	1	3	3	3	0	2
CO4	1	0	3	3	3	1	0	4

Course Mapping:

Local	Regional	National	Global
Y	Y	Y	N

Professional Ethics	Gender	Human Values	Environment & Sustainability
Y	Y	Y	N

Employability	Entrepreneurship	Skill Development
Y	N	Y

Course Pedagogy:

Lecture, Case study, hands on analysis

Course Content:

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, Subhasini Chellappan, "Big Data Analytics" Wiley 2015

Reference Books

- 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.
-

Course Evaluation Criteria:

Instruments	Marks
Mid Term Exam	20
Assignment 1	4
Assignment 2	4
Assignment 3	4
Class Participation (Skill Development)	8
Total Marks- Internal Examination	**40**

Marks Distribution Scheme for final exams: (For 4 Credit Course)*

- ***will vary as per credits**

Unit	Marks
Mixed evaluation from all units	10
1	10
2	10
3	10
4	10
5	10
Total	**60**

Total (Internal Assessment + External) Assessment)	**100**

COURSE OUTLINE (Batch 2025-27)
MBA_BA III Semester

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

Credits: 4

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

CO1a: Understand the conceptual foundations of research.

CO1b: Describe sampling design and recognize various tools of measurement of data.

CO2: Identify and analyze the essential features of data preparation.

CO3: Describe and demonstrate the predictive analytics, namely, the regression technique.

CO4: Define and understand the various multivariate techniques.

PO-CO-PSO Matrix:

COs	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1a	3	–	2	2	3	2	2	1
CO1b	3	2	2	2	2	2	3	2
CO2	2	3	2	2	2	1	3	2
CO3	2	3	3	2	3	2	2	1
CO4	2	1	2	1	3	2	1	2

Course Mapping:

Local	Regional	National	Global
Y	Y	Y	Y

Professional Ethics	Gender	Human Values	Environment & Sustainability
N	N	N	Y

Employability	Entrepreneurship	Skill Development
Y	N	Y

Course Pedagogy:
Lecture, Case study, hands on analysis

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: data entry , editing, coding, tabulation, 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, heterosceda sticity, 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.

Course Evaluation Criteria:

Instruments	Marks
Mid Term Exam	20
Assignment 1	4
Assignment 2	4
Assignment 3	4
Class Participation (Skill Development)	8
Total Marks- Internal Examination	**40**

Marks Distribution Scheme for final exams: (For 4 Credit Course)*

- ***will vary as per credits**

Unit	Marks
Mixed evaluation from all units	10
1	10
2	10
3	10
4	10
5	10
Total	60

Total (Internal Assessment + External) Assessment)	**100**

COURSE OUTLINE (Batch 2025-27)
MBA_BA III Semester

MBA_BA III SEMESTER CONSUMER BEHAVIOR PAPER CODE: MBA-BA-303 -GE 01	Max. Marks: 100 Min. Marks: 35 External :60 Internal: 40

Credits: 04

MBA(BA)303
CONSUMER BEHAVIOR

Course Objectives:

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

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

CO1a: Understand the application and methods of consumer research

CO1b: Acquire the knowledge of individual determinants of consumer behavior

CO2: Understand the facets of group dynamics with reference to consumer behavior

CO3: Comprehend the communication and consumer decision-making process.

s Describe various models of consumer behavior and application of CB in industrial

PO-CO-PSO Matrix:

COs	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1a	3	2	3	3	2	3	2	2
CO1b	3	3	2	3	3	3	3	3
CO2	3	2	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3
CO4	3	2	3	3	3	3	3	3

Course Mapping:

Local	Regional	National	Global
Y	Y	Y	Y

Professional Ethics	Gender	Human Values	Environment & Sustainability
Y	Y	Y	Y

Employability	Entrepreneurship	Skill Development
Y	N	Y

Course Pedagogy:

Lecture, Case study, hands on analysis

Course Content:

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. Schiffman and Leslie Lasar Kanuk, Consumer Behavior, Pearson Education, India,2002.
- Paul Peter et al., Consumer Behavior and Marketing Strategy, Tata McGraw Hill, Indian Edition,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: A strategic approach (Indian edition2005) Wiley 2012.
- Hed, Hoyer. Consumer behavior, 2008 editionWiley2012.
- Das Gupta.Consumer behavior, 2008 edition, Wiley2012.
- Shri Prakash. Theory of Consumer behavior, I edition, Vikas2012.
- Srabanti Mukherjee, Consumer behavior, 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(T hirteenthedition). New York, 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.

Course Evaluation Criteria:

Instruments	Marks
Mid Term Exam	20
Assignment 1	4
Assignment 2	4
Assignment 3	4
Class Participation (Skill Development)	8
Total Marks- Internal Examination	**40**

Marks Distribution Scheme for final exams: (For 4 Credit Course) *
***will vary as per credits**

Unit	Marks
Mixed evaluation from all units	10
1	10
2	10
3	10
4	10
5	10
Total	**60**

Total (Internal Assessment + External) Assessment)	**100**

COURSE OUTLINE (Batch 2025-27)
MBA_BA III SEMESTER

MBA_BA III SEMESTER SOCIALMEDIA&WEB ANALYTICS PAPERCODE:DSEC-01 MBA BA-304	Max.Marks:100 Min.Marks:35 External:60 Internal:40

Credits: 04

MBA(BA)304
SOCIALMEDIA&WEB ANALYTICS

Course Objectives:

To equip students with knowledge and analytical skills to interpret social media and web data using network analysis, key metrics, and data tools for strategic business insights.

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

CO1a: Understand the concepts and functions of Management.

CO1b: Articulate management agenda using tools and techniques of planning

CO2: Devise the organization structure and distill the organization function.

CO3: Developing skills in directing individuals and groups.

CO4: Analyze various control systems and their effectiveness in achieving organization goals.

PO-CO-PSO Matrix:

COs	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1a	3	3	3	0	1	3	3	2
CO1b	2	1	3	2	0	1	3	2
CO2	1	3	3	0	2	2	3	3
CO3	2	1	1	3	3	3	0	3
CO4	1	1	3	3	3	1	0	4

Course Mapping:

Local	Regional	National	Global
Y	Y	Y	N

Professional Ethics	Gender	Human Values	Environment & Sustainability
Y	Y	Y	N

Employability	Entrepreneurship	Skill Development
Y	N	Y

Course Pedagogy:

Lecture, Case study, hands on analysis

Course Content:

Unit1:Introduction to social media & web Analytics: Websites, web apps, mobile apps, and social media- usability, user experience, customer experience, customer sentiment, web marketing, conversion rates, brand reputation, competitive advantage

Unit 2: Social media analytics: Social media KPIs (reach& engagement) – Performing social media analytics (business goal, KPIs, data gathering, analysis, measure and feedback)

Unit3: Data Analysis language and tools: Ready-made tools for web and social media analysis – key Google analysis metrics, dashboard, and social reports. Web analytics and web analytics 2.0 framework (click stream, multiple outcome analysis, voice of customer).
Connections: Makingconnections:Linkanalysis.Randomgraphs andnetworkevolution. Socialcontexts:Affiliationandentity.Connection:Search,collapse,robustness,Socialmovementsand diffusionofinnovation.

Unit 4: Ego Networks, Centrality and Power: Ego Networks: Introduction, Ego network data, egonetworkdensity,structuralholes,brokerage.Centrality,centralization,andpower:Introduction,Degr eecentrality,closeness centrality, betweenness centrality. Embedding:Introduction,Density,Reciprocity,Transitivity,Clustering,Group-externalandgroup-internalities,Krackhardt'sgraphtheoreticaldimensions ofhierarchy.

Unit 5: Cliques and Subgroups: Positions and Roles, Cliques and Groups: Introduction, Bottom-upapproaches,top-downapproaches.Homophileand social segregation. MeasuresofSimilarityandStructural,Auto-morphicand RegularEquivalence:PositionsandSocialRoles.Introduction,measuringsimilarity/dissimilarity,visualizingsimilarityanddistance,describingstructuralequivalencesets.AutomorphicEquivalence:Definition,usesof the concept,findingequivalencesets.Regularequivalence:Definition,uses of the concept,findingequivalencesets.

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.

Course Evaluation Criteria:

Instruments	Marks
Mid Term Exam	20
Assignment 1	4
Assignment 2	4
Assignment 3	4
Class Participation (Skill Development)	8
Total Marks- Internal Examination	**40**

Marks Distribution Scheme for final exams: (For 4 Credit Course)*
***will vary as per credits**

Unit	Marks
Mixed evaluation from all units	10
1	10
2	10
3	10
4	10
5	10
Total	60

Total (Internal Assessment + External) Assessment)	**100**

COURSE OUTLINE (Batch 2025-27)
MBA_BA III Semester

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

Credits: 4

MBA(BA) 305
FINANCIAL ANALYTICS

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

CO1a: Understand the concept, need of Financial Analytics and time value of money.

CO1b: Possessing knowledge of Financial Market Structures, Asset pricing theories and the optimal portfolio

CO2: Applying Volatility and Risk Model for forecasting

CO3: Analysing Risk Measurement technique for financial Institution.

CO4: Estimate derivative price and interoperating different issues in International Finance.

PO-CO-PSO Matrix:

COs	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1a	3	2	–	2	–	2	2	1
CO1b	3	3	3	–	2	3	3	2
CO2	3	3	2	–	–	3	2	2
CO3	3	–	–	2	2	2	2	2
CO4	3	3	2	3	2	3	3	3

Course Mapping:

Local	Regional	National	Global
Y	Y	Y	Y

Professional Ethics	Gender	Human Values	Environment & Sustainability
N	N	N	Y

Employability	Entrepreneurship	Skill Development
Y	N	Y

Course Pedagogy:

Lecture, Case study, hands on analysis

Course Content:

Unit 1: Introduction to Financial Analytics: Definition, Types, relevance and scope financial Analytics, recent trends in financial analytics
Financial Time Series and Their Characteristics: Asset Returns, 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, Diversification and Portfolio Optimization

Unit 3: Modeling Volatility and Risk: Characteristics of volatility. Modeling volatility using ARCH/GARCH models; AR, MA, ARMA, ARIMA, Scenerio Analysis

Unit 4: Risk Measurement in Financial Institutions, Measuring Market and Credit Risks, Modeling Credit Risk: Corporate Liabilities as contingent claims, Capital Structure, Intensity Modeling, Rating based term-structure models, Volatility Estimation in Financial Market Turbulence, Measuring and modeling risk. Application of Value at Risk (VaR)

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.

Course Evaluation Criteria:

Instruments	Marks
Mid Term Exam	20
Assignment 1	4
Assignment 2	4
Assignment 3	4
Class Participation (Skill Development)	8
Total Marks- Internal Examination	**40**

Marks Distribution Scheme for final exams: (For 4 Credit Course) *
***will vary as per credits**

Unit	Marks
Mixed evaluation from all units	10
1	10
2	10
3	10
4	10
5	10
Total	**60**

Total (Internal Assessment + External) Assessment)	**100**

COURSE OUTLINE (Batch 2025-27)
MBA_BA III Semester

MBA_BA III SEMESTER PRACTICAL LAB ON BIG DATA PAPER CODE: MBA-BA –306	Max. Marks: 50 Min. Marks: 18 External: 25 Internal: 25

Credits: 02

MBA(BA)306
PRACTICAL LAB ON BIG DATA

Course Objectives:

This course aims to equip individuals with the knowledge and skills to handle, analyze, and interpret large, complex datasets, often using specialized tools and techniques.

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

CO1a: Understand the need of big data analytics and it's tools

CO1b: Understand the architecture of Hadoop and apply it to analyse data

CO2: Demonstrate the knowledge of big data analytics and implement different file management task in Hadoop.

CO3: Understand Map Reduce Paradigm and develop data applications using variety of systems.

CO4: Able to develop apache spark applications

PO-CO-PSO Matrix:

COs	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1a	3	2	2	0	1	3	2	3
CO1b	2	3	3	2	0	1	2	2
CO2	1	2	3	1	2	1	3	3
CO3	2	1	1	3	3	3	0	3
CO4	1	0	3	0	3	1	0	4

Course Mapping:

Local	Regional	National	Global
Y	Y	Y	N

Professional Ethics	Gender	Human Values	Environment & Sustainability
Y	Y	Y	N

Employability	Entrepreneurship	Skill Development
Y	N	Y

Course Pedagogy:

Lecture, Case study, hands on analysis

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

1. 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 Map Reduce, 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 line of input files associated with a temperature value greater than 30.0 and store it- in a separate file.

   1. 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.

   2. Install and Run Pig then write Pig Latin scripts to sort, group, join, project, and filter your data.

3. Write a Pig Latin scripts for finding TF-IDF value for book dataset (A corpus of eBooks available at: Project Gutenberg)
4. Install and Run Hive then use Hive to create, alter, and drop databases, tables, views, functions, and indexes.
5. Install, Deploy & configure Apache Spark Cluster.
6. Data analytics using Apache Spark on Amazon food dataset, find all the pairs of items frequently reviewed together.

- Write a single Spark application that:
- Transposes the original Amazon food dataset, obtaining a Pair RDD 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 once and their frequencies. The pairs of products must be sorted by frequency.

NOTE: Prepare capstone project for Big Data Analytics using above exercises.

Text Books

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

Reference Books

- 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

Course Evaluation Criteria:

Internal	Marks
Practical Assignment 1	4
Assignment 2	5
Class Participation (Skill Development)	6+7+3
Total Marks- Internal Examination	**25**

Marks Distribution Scheme for final exams: (For 4 Credit Course)*
***will vary as per credits**

External	Marks
Final External Viva	25
Total	**25**

Total (Internal Assessment + External) Assessment)	**50**

COURSE OUTLINE (Batch 2025-27)
MBA_BA III Semester

MBA_BA III SEMESTER	**Max. Marks: 50**
DATA VISUALIZATION LAB	**Min. Marks: 18**
PAPER CODE: MBA BA 307	**External 25**
	Internal: 25

Credits: 02

MBA(BA)307
DATA VISUALIZATION LAB

Course Objectives:

This course covers practical implementation of concepts regarding preparing, analyzing and visualizing tools and techniques using Power BI.

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

CO1a: Understand the concepts Business Intelligence and Power BI.

CO1b: Understand and Implement Data transformation using the query editor

CO2: Understand and Develop the Data Relationships and calculations of measures

CO3: Understand and Implement Data Analysis using DAX

CO4: Analyze and Implement Visuals in Power BI to create reports

PO-CO-PSO Matrix:

COs	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1a	2	3	2	2	3	2	2	3
CO1b	2	3	2	2	3	3	3	3
CO2	2	3	2	3	2	3	2	3
CO3	2	3	2	3	2	2	3	3
CO4	2	3	3	3	3	2	3	3

Course Mapping:

Local	Regional	National	Global
Y	Y	Y	Y

Professional Ethics	Gender	Human Values	Environment & Sustainability
Y	Y	Y	N

Employability	Entrepreneurship	Skill Development
Y	Y	Y

Course Pedagogy:

Lecture, Example, Hands on Analysis

Course Content:

UNIT 1: Introduction to Power BI

Introduction to Business Intelligence, Introduction to Power BI and Power BI Desktop, Traditional BI vs. Power BI, Uses of Power BI, Basic Components of Power BI, Data model and importance of Data Modelling

UNIT 2: Power BI Desktop and Data Transformation

Power BI Views: Report View, Table View, Model View and DAX Query View; Power BI; Data: Data Sources in Power BI Desktop, Loading Data in Power BI Desktop; Data Transformation: Data Query Editor in Power BI, Transform and Clean data

UNIT 3: Data modeling and Measures

Data Modeling: Shape and Model Data, Manage Data Relationship, Editing a Relationship, Cross Filter Direction; Measures: Introduction to Measures, Uses of Measures in Data Analysis;

UNIT 4: Data Analysis Expression (DAX)

Introduction to DAX, Importance in DAX, Data Types in DAX, DAX Calculation Types, Steps to Create Calculated Columns, DAX Syntax, DAX Functions, DAX Operators, DAX Tables and Filtering

UNIT 5: Data Visualization

Introduction to Visuals In Power BI, Visualization Charts in Power BI, Matrixes and Tables, Slicers and Map Visualizations, Gauges and Single Number Cards, Modifying Colors in Charts and Visuals, Shapes, Text Boxes, and Images

Suggested Readings:

- Mihiranga Nisal (2022). Power BI Data Modeling Delhi: BPB Publication.
- Sinha Chandraish (2024). Mastering Power BI. Delhi: BPB Publication

Course Evaluation Criteria:

Instruments	Marks
File	6
Assignment 1	6
Assignment 2	8
Assignment 3	5
Total Marks- Internal Examination	**25**

Marks Distribution Scheme for final exams: (For 2 Credit Course)*

***will vary as per credits**

Unit	Marks
External Viva	25
Total	**25**

Total (Internal Assessment + External) Assessment)	**50**

COURSE OUTLINE (Batch 2025-27)
MBA_BA IV Semester

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

Credits: 04

MBA(BA)401
SMALL BUSINESS DEVELOPMENT

Course Objectives:

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

CO1a Develop the skills and qualities required to be a successful entrepreneur.

CO1b Understand the theories of entrepreneurship and the challenges faced by women and rural entrepreneurs.

CO2 Learn about creating entrepreneurial venture and feasibility studies in project development.

CO3 Analyze and compare the different funding agencies available for training and funding new enterprises.

CO4 Analyze and compare the different entrepreneurial agencies available for the growth of Entrepreneurship in India.

PO-CO-PSO Matrix:

COs	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1a	3	1	2	3	2	2	3	2
CO1b	3	1	3	3	3	2	2	1
CO2	3	3	3	2	2	3	3	1
CO3	3	1	3	2	3	3	3	1
CO4	-		2	1	1	3	3	1

Course Mapping:

Local	Regional	National	Global
Y	Y	Y	N

Professional Ethics	Gender	Human Values	Environment & Sustainability

Y	Y	N	N

Employability	Entrepreneurship	Skill Development
Y	Y	Y

Course Pedagogy:
Lecture, Case study, hands on analysis
Course Content:

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, Government Schemes related to Entrepreneurship.

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.

Course Evaluation Criteria:

Instruments	Marks
Mid Term Exam	20
Assignment 1	4
Assignment 2	4
Assignment 3	4
Class Participation (Skill Development)	8
Total Marks- Internal Examination	**40**

Marks Distribution Scheme for final exams: (For 4 Credit Course)*
***will vary as per credits**

Unit	Marks
Mixed evaluation from all units	10
1	10
2	10
3	10
4	10
5	10
Total	**60**

Total (Internal Assessment + External) Assessment)	**100**

COURSE OUTLINE (Batch 2025-27)
MBA_BA IV Semester

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

Credits: 04

MBA(BA)402
CYBER SECURITY & LAW

Course Objectives:

This course aims to provide foundational knowledge of computers, cyberspace, and cyber laws, with a focus on ethical practices, digital security, and legal frameworks. It covers key aspects of the Information Technology Act, e-commerce regulations, cybercrimes, and data privacy, while emphasizing the need for cyber security and the protection of individual rights in the digital era.

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

CO1a: Identify and resolve security issues in networks and computer systems to secure any public or private organization.

CO1b: Understand the concept of Cyberspace and Regulation of cyberspace.

CO2: Apply the branches of law, jurisdictional boundaries and cybersecurity law enforcement.

CO3: Analyze the concept and impact of E-commerce on business models and strategy.

CO4: Recommend a legal defence against data breaches or cybercrime civil or criminal proceedings.

PO-CO-PSO Matrix:

Course Outcomes	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1a	3	3	2	2	2	3	2	2
CO1b	2	3	1	2	3	2	2	2
CO2	2	1	1	3	2	3	2	2
CO3	2	2	2	3	3	3	3	2
CO4	2	1	2	3	2	3	2	2

Course Mapping:

Local	Regional	National	Global
Y	Y	Y	N

Professional Ethics	Gender	Human Values	Environment & Sustainability
Y	Y	Y	N

Employability	Entrepreneurship	Skill Development
Y	N	Y

Course Pedagogy:

Lecture, Case Study, Hands-on Assignments, Legal Analysis of Case Laws and Acts

Course Content:

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 Cyberspace – 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, E-commerce 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.Foundations of Cyber Ethics, Ethics and Cyber Laws

Suggested Readings:

- K.L. James, The Internet: A User's Guide, Prentice Hall of India, New Delhi.
- Brijendra Singh, Network Security and Management, PHI.
- Trevor Arden, GNVQ core Skills-Information Technology, Pitman Publishing, London.
- Kamlesh N. Agarwala & Murali D. Tiwari (Ed.), I.T. and Indian Legal System, Macmillan India.
- T. Ramappa, Legal Issues in Electronic Commerce, Macmillan India.
- Indian Law Institute, Legal Dimensions of Cyber Space.
- Rodney Ryder, Guide to Cyber Law, Pro Law Publications.
- Justice Yatindra Singh, Cyber Laws, Universal Law Publishing.
- Farouq Ahmed, Cyber Law in India, Allahabad Law Agency.
- Karnika Seth, Computers, Internet and New Technology Laws, LexisNexis.
- Kamath Nandan, Law relating to Computer, Internet and E-Commerce, Universal Law Publishing.

Course Evaluation Criteria:

Instruments	Marks
Mid Term Exam	20
Assignment 1	4
Assignment 2	4
Assignment 3	4
Class Participation	8
Total (Internal)	**40**

Marks Distribution Scheme for Final Exams:

Unit	Marks
Mixed Questions from All Units	10
Unit 1	10
Unit 2	10
Unit 3	10
Unit 4	10
Unit 5	10
Total (External)	**60**

Total (Internal Assessment + External) Assessment)	**100**

COURSE OUTLINE (Batch 2025-27)
MBA_BA IV Semester

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

Credits: 04

MBA(BA)403
SECURITIES ANALYSIS AND PORTFOLIO MANAGEMENT

Course Objectives:

To make investment decisions and at providing a comprehensive introduction to the areas of security analysis and portfolio management

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

CO1a: Understand the basics of Capital Market

CO1b: Analyze the risk and return of Securities

CO2: Apply the Fundamental and Technical Indicators to predict Stock Market trends

CO3: Demonstrate the Modern Portfolio Management and its application in portfolio selection

CO4: Assess portfolio revision technique and portfolio performance

PO-CO-PSO Matrix:

COs	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2
CO1a	1	2	-	1	-	2	3
CO1b	2	2	2	1	2	2	2
CO2	2	3	3	3	3	3	2
CO3	3	2	3	1	1	2	2
CO4	2	1	2	1	2	1	2

Course Mapping:

Local	Regional	National	Global
Y	Y	Y	N

Professional Ethics	Gender	Human Values	Environment & Sustainability
Y	Y	N	N

Employability	Entrepreneurship	Skill Development
Y	Y	Y

Course Pedagogy:

Lecture, Case study, hands on analysis, Mini Project

Course Content:

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,IntrinsicValue;ProblemofReturn&Risk;ExpectedReturn, Components of Risk; Measurement of Risk, Variance, Standard Deviation, Security Beta; Calculating & Interpreting Beta, Valuation of Fixed Income Securities; Debentures andBonds;CurrentYield;YieldToMaturity(YTM);YieldtoCall(YTC);BondDurationValuat ionof 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 CAPMB eta; 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 Hill Publishing 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 Publications Pvt.Ltd
- Fisher and Jordan. Security Analysis & Portfolio Management-, 6/ePearson,PHI.

Course Evaluation Criteria:

Instruments	Marks
Mid Term Exam	20
Assignment 1	4
Assignment 2	4
Assignment 3	4
Class Participation (Skill Development)	8
Total Marks- Internal Examination	**40**

Marks Distribution Scheme for final exams: (For 4 Credit Course)*
***will vary as per credits**

Unit	Marks
Mixed evaluation from all units	10
1	10
2	10
3	10
4	10
5	10
Total	60

Total (Internal Assessment + External) Assessment)	100

COURSE OUTLINE (Batch 2025-27)
MBA_BA IV Semester

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

Credits:4

MBA(BA)404
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.

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

CO1a: Understand various marketing models and metrics

CO1b: Demonstrate Competitive analysis

CO2: Explain Price analytics

CO3: Understand Promotion analytics

CO4: Understand Sales analytics

PO-CO-PSO Matrix:

COs	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1a	2	2	2	2	1	2	3	3
CO1b	3	3	3	2	1	2	3	2
CO2	3	3	3	2	1	3	3	3
CO3	3	3	2	3	2	2	3	3
CO4	2	3	2	2	2	3	3	2

Course Mapping:

Local	Regional	National	Global
Y	Y	Y	Y

Professional Ethics	Gender	Human Values	Environment & Sustainability
N	N	N	Y

Employability	Entrepreneurship	Skill Development
Y	N	Y

Course Pedagogy:

Lecture, Case study, hands on analysis

Course Content:

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 STP Analysis: creating segments, targeting and positioning using K mean 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.

Course Evaluation Criteria:

Instruments	**Marks**
Mid Term Exam	20
Assignment 1	4
Assignment 2	4
Assignment 3	4
Class Participation (Skill Development)	8
Total Marks- Internal Examination	**40**

- **Marks Distribution Scheme for final exams: (For 4 Credit Course) ***
- ***will vary as per credits**

Unit	**Marks**
Mixed evaluation from all units	10
1	10
2	10
3	10
4	10
5	10
Total	**60**

Total (Internal Assessment + External) Assessment)	**100**

COURSE OUTLINE (Batch 2025-27)
MBA_BA IV Semester

MBA_BA IV SEMESTER **HR ANALYTICS** **PAPER CODE: DSEC-04** **MBA BA-405**	**Max. Marks: 100** **Min. Marks: 35** **External :60** **Internal: 40**

Credits: 4

MBA(BA)405
HR ANALYTICS

Course Objectives:

Course will cover the application part of Human Resource Management explaining the quantitative and qualitative analysis to understand the workforce demographics and the art of work force development

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

CO 1a: Introduces the theory, concepts, and business application of human resources data, metrics and systems.

CO 1b: Business application of human resources research, data, metrics, systems, analyses, and reporting.

CO2: Examine actual business cases and apply problem solving and critical thinking skills through group case studies

CO3: Understand the application of quantitative and qualitative analysis to understand trends and indicators in human resource data.

CO4: Apply quantitative and qualitative analysis to understand trends and indicators in human resource data.

PO-CO-PSO Matrix:

COs	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1a	3	3	2	2	3	3	3	2
CO1b	3	3	3	3	2	3	3	3
CO2	3	3	3	3	2	3	3	2
CO3	2	3	3	3	2	3	3	2
CO4	2	3	3	3	2	3	3	3

Course Mapping:

Local	Regional	National	Global
Y	Y	Y	N

Professional Ethics	Gender	Human Values	Environment & Sustainability
Y	N	Y	N

Employability	Entrepreneurship	Skill Development
Y	N	Y

Course Pedagogy:

Lecture, Case study, hands on analysis

Course Content:

UNIT 1: HR Analytics in Perspective

Role of Analytics, Defining HR Analytics, HR Analytics: The Third Wave for HR value creation, HR Measurement journey in tune with HR maturity journey, Understanding the organizational system (Lean) , Locating the HR challenge in the system, Valuing HR Analytics in the organizational system, Typical problems (working session)

UNIT 2 : HRA Frameworks:

Current approaches to measuring HR and reporting value from HR contributions, Strategic HR Metrics versus Benchmarking, HR Scorecards & Workforce Scorecards and how they are different from HR Analytics, HR Maturity Framework: From level 1 to level 5, HR Analytics Frameworks: (a) LAMP framework; (b) HCM:21 Framework and (c) Talent ship Framework, 5 overarching components of an effective Analytics framework.

UNIT 3: Basics of HR Analytics:

Basics of HR Analytics, what is Analytics, Evolution, Analytical capabilities, Analytic value chain, Analytical Model, Typical application of HR analytics.

Predictive Analytics:

Steps involved in predictive analytics: Determine key performance indicator, analyse and report data, interpreting the results and predicting the future. Metrics and Regression analysis and Causation.

UNIT 4: Insight into Data Driven HRA:

Typical data sources, Typical questions faced (survey), Typical data issues, Connecting HR Analytics to business benefit (case studies), Techniques for establishing questions, Building support and interest, Obtaining data, Cleaning data (exercise), Supplementing data.

UNIT 5 : HR Metrics

Defining metrics, Demographics, data sources and requirements, Types of data, tying data sets together, Difficulties in obtaining data, ethics of measurement and evaluation. Human capital analytics continuum.

HR Dashboards : Statistical software used for HR analytics: MS-Excel, IBM- SPSS

Assessing HR Program, engagement and Turnover, Finding money in Analytics, Linking HR Data to operational performance, HR Data and stock performance. Creating HR Scorecard, develop an HR measurement system, guidelines for implementing a HR Scorecard.

Suggested Readings Book

- Moore, McCabe, Duckworth, and Alwan. The Practice of Business Statistics: Using Data for Decisions, Second Edition, New York: W.H.Freeman, 2008.
- Predictive analytics for Human Resources, Jac Fitz- enz, John R. Mattox, II, Wiley, 2014.
- Human Capital Analytics: Gene Pease Boyce Byerly, Jac Fitz-enz, Wiley,2013.
- The HR Scorecard: Linking People, Strategy, and Performance, by Brian E. Becker, Mark A. Huselid, Mark A Huselid, David Ulrich, 2001.
- HR Analytics: The What, Why and How, by Tracey Smith
- The New HR Analytics: Predicting the Economic Value of Your Company's Human By Jac FITZ-ENZ, 2010
- Investing in People: Financial Impact of Human Resource Initiatives (2nd Edition) Hardcover –December18,2010.byWayneCascio(Author),JohnBoudreau(Author)ISBN-13:978-0137070923ISBN-10: 0137070926 Edition: 2nd
- Fundamentals of Human Resource Management Noe, 5th ed.

Course Evaluation Criteria:

Instruments	Marks
Mid Term Exam	20
Assignment 1	4
Assignment 2	4
Assignment 3	4
Class Participation (Skill Development)	8
Total Marks- Internal Examination	**40**

Marks Distribution Scheme for final exams: (For 4 Credit Course)*
***will vary as per credits**

Unit	Marks
Mixed evaluation from all units	10
1	10
2	10
3	10
4	10
5	10
Total	**60**

Total (Internal Assessment + External) Assessment)	**100**

COURSE OUTLINE (Batch 2025-27)
MBA_BA IV Semester

MBA_BA IV Semester PREDICTIVE ANALYTICS USING SPSS PAPER CODE: MBA BA-406	Max. Marks: 100 Min. Marks: 35 External: 50 Internal: 50

Credits: 04

MBA(BA)406
PREDICTIVE ANALYTICS USING SPSS

Course Objectives:

This course introduces the fundamentals of business analytics and its role in decision-making, covering key techniques like regression, logistic models, decision trees, and time series analysis. It aims to equip students with practical skills in data analysis using tools like SPSS for solving real-world business problems.

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

CO1a: Understand appropriate and relevant fundamental of predictive analytics.

CO1b: Analyze, and interpret the data using the various methods.

PO-CO-PSO Matrix:

Course Outcomes	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2
CO1a	3	3	2	2	1	2	1
CO1b	3	3	3	2	2	3	2

Course Mapping:

Local	Regional	National	Global
Y	Y	Y	N

Professional Ethics	Gender	Human Values	Environment & Sustainability
Y	Y	Y	N

Employability	Entrepreneurship	Skill Development
Y	N	Y

Course Pedagogy:

Lecture, Case study, hands on analysis

Course Content:

UNIT 1: Introduction to Management 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 V: 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.

Suggested Readings:

- 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.

Course Evaluation Criteria:

Instruments	Marks
Internal Assessment	50
External Viva	50
Total	100

Total (Internal Assessment + External) Assessment)	**100**