Sri Sivasubramaniya Nadar College of Engineering

(An Autonomous Institution, Affiliated to Anna University, Chennai)

Regulation 2025

Curriculum and Syllabi

for

Master of Business Administration

Sri Sivasubramaniya Nadar College of Engineering
(An Autonomous institution, Affiliated to Anna University Chennai)

Department of Management Studies

VISION

- To be an institution of choice among aspiring managers to launch successful careers and engage in research as a means of keeping abreast of latest developments and generate new knowledge in management.

MISSION

M1: Develop industry ready and effective managers by imparting insightful knowledge and necessary skills.

M2: Provide an environment to aid continuous learning among students.

M3: Collaborate with industry for creating meaningful opportunities for students.

M4: Continuously strive to increase and improve research activities.

M5: Create and leverage opportunities in training and consultancy to foster linkages with industry.

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

- **PEO1**: Develop professional competence to become successful managers and entrepreneurs.
- **PEO2**: Handle diverse opportunities that arise due to changing environment.
- **PEO3**: Become problem solvers by acquiring the knowledge and thinking skills necessary on a continuous basis.
- **PEO4:** Work in teams and assume leadership roles during the career.
- **PEO5:** Be socially sensitive and ethically conscious citizens actively contributing to the country.

Approved in 8th Academic Council Meeting on 4th June 2025

PROGRAM OUTCOMES (POs)

After the successful completion of the MBA degree program, the students should be able to:

PO1 -Domain Knowledge

Demonstrate a familiarity and understanding of principles and concepts in management.

PO2 -Business Environment Knowledge

Demonstrate knowledge of contemporary issues that have an impact on the business and industry.

PO3 - Critical Thinking and Problem-Solving Skills

Apply the relevant knowledge gained to read situations, analyze and solve business problems.

PO4 -Communication Skills

Ability to communicate effectively, to achieve organizational and individual goals.

PO5 -Team Skills

Work in teams of diverse people to meet organizational goals.

PO6 -Leadership Skills

Demonstrate leadership skills appropriate for managerial roles in organizations.

PO7 -Ethical Orientation

Identify and appreciate the ethical issues in management decision area.

PO8 -Lifelong Learning

Ability to pursue lifelong learning.

PEOs mapping with POs

Program Outcomes # / **PEO #**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**
PEO 1	3	3	3	3	3	3	1	3
PEO 2	3	3	3	1	1	3	1	3
PEO 3	2	3	3	1	1	2	1	3
PEO 4	2	2	1	3	3	3	1	3
PEO 5	1	1	1	1	1	1	3	3

CO-PO- MAPPING

SEM	COURSE TITLE	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
I	Individual and Group Dynamics in Organizations	3	2	2	2	2	2	2	2
	Accounting for Management	3	3	2	2	3			3
	Economic Analysis for Business	3	2	2	2				3
	Marketing Management I	3	2	2	2	2	1		3
	Information Management	3	3	2	2	2	1	1	2
	Quantitative Methods for Business Decisions	3	3	2	1				2
	Advanced Excel and Visualization	3	3	2	3				3
	Legal Aspects of Business*	3	3	2	3		2		2
	Soft Skills I* (Professional Skills Development)	3	2	2	2				2
	Business Communication I*	3	1	1	3	2	1	2	3
	Industry Analysis*	3	3	2	3	3	2	1	3
II	Marketing Management II	3	2	2	2	2			2
	Financial Management	3	3	2	2	3	2	1	2
	Operations Management	3	3	2	2	1			2
	Human Resource Management	3	2	2	3	2	2	2	3
	Business Analytics	3	3	2	2	3	1		3
	Applied Operations Research (TCP)	3	3	3	2				2
	Research Methodology for Business (TCP)	3	3	2	3	3	2	3	3
	Data Intelligence Laboratory	3	3	2	2			3	3
	Cross-functional Elective	*Shown in table separately							
	Soft Skills II* (Employment Enhancement Skills)	3	3	3	2	3	2		3
	Business Communication II*	3	1	1	3	2	1	1	3

III	Business and Corporate Strategy	3	3	2	3	3	3	2	3
	Elective 1 - Specialization 1	*Shown in table separately							
	Elective 2 - Specialization 1								
	Elective 3 - Specialization 1								
	Elective 1 - Specialization 2								
	Elective 2 - Specialization 2								
	Elective 3 - Specialization 2								
	Summer Internship / Rural Community Engagement	3	3	3	3	3	3	3	3
IV	Business Ethics and Corporate Governance	3	2	2	1			3	3
	Innovation and New Product Development*	3	3	2	3	2	2		3
	Final Semester Project	3	3	3	3	3	3	3	3
	Elective 4 - Specialization 1	*Shown in table separately							
	Elective 4 - Specialization 2								

CROSS-FUNCTIONAL ELECTIVES

S. NO	**COURSE TITLE**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**
1	Business Analysis and Process Management	3	2	2	3	3	3	3	3
2	Entrepreneurship Development	3	3	3	2	2	1	1	2
3	Sustainable Development and ESG	3	3	2	2	2	1	1	3

SPECIALIZATION - MARKETING									
S. NO	**COURSE TITLE**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**
1	Advertising and Digital Marketing	3	3	3	3	3	3	3	3
2	B2B Technology Sales Management	3	2	2	1	1	1		3
3	Brand Management	3	3	2	3	3	1		3
4	Consumer Behaviour and Analytics	3	3	2	1	1	1		3
5	Digital Customer Relationship Management	3	3	3	2			3	3
6	International Marketing	3	3	2	3	3	1		3
7	Services Marketing	3	3	3	1	1	1	1	3
8	Marketing Research	1	3	3	2	2	2	3	2
9	Multi-Channel Sales Management	3	2	1	1	1			3
10	Retail Management	3	3	3	1	1	1		3
11	Marketing Analytics	2	2	3	2	2	2	2	3
12	Social Media and Web Analytics	3	2	3	2				3
SPECIALIZATION - FINANCE									
S. NO	**COURSE TITLE**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**
1	Banking and Fintech Services	3	3	3	3	3	2	1	3
2	Financial Statement Analysis	3	3	2	3	2	1	1	3
3	Security Analysis and Portfolio Management	3	2	2	3	2	1	1	3
4	Strategic Restructuring and Sustainable Finance	3	3	3	3			2	3
5	Financial Cybersecurity and Fraud Management	3	2	2	2			2	3
6	Financial Analytics (TCP)	3	2	2	2			2	3
7	Behavioral Finance	3	2	2	3			2	3
8	Financial Modelling and Analysis (TCP)	3	2	2	2			2	3

SPECIALIZATION - HUMAN RESOURCE MANAGEMENT									
S. NO	**COURSE TITLE**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**
1	Compensation Management	3	2	2	3	3	3	2	2
2	Competency Framework for Manager Development	3	2	2	3				2
3	HR Operations and Automations	3	2	2	3	3			2
4	Strategic Human Resource Management	3	3	3	2			2	3
5	People Analytics	3	3	2	3				
6	Talent Acquisition and Management	3	3	3	2	2			2
7	Industrial Relations and Labour Laws	3	3	3					
8	Organization Theory, Structure and Design	3	2	2	2	3	3	2	2
9	Managerial and Behavioural Ethics	3	3	3	2			2	3
SPECIALIZATION - OPERATIONS									
S. NO	**COURSE TITLE**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**
1	Project Management (TCP)	**3**	**3**	**2**	**2**	**2**	**1**		**2**
2	Supply Chain and Logistics Management (TCP)	3	3	3	3	3	2	3	2
3	Service Operations Management	3	2	1	2				2
4	Operations Research Applications	3	3	2	2	2			2
5	Operations Strategy	3	3	2	2	2			2
6	Sales and Operations Planning	3	3	2	2	2			2
7	Supply Chain Analytics TCP	3	3	2	2	1			2
8	Behavioral Operations Management	3	2	2	2	2			2

SPECIALIZATION - SUPPLY CHAIN									
S. NO	**COURSE TITLE**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**
1	Project Management (TCP)	**3**	**3**	**2**	**2**	**2**	**1**		**2**
2	Supply Chain and Logistics Management (TCP)	3	3	3	3	3	2	3	2
3	Digital Innovation and Technology in SCM	3	3	2	3	3	2	2	2
4	Procurement and Materials Management	3	3	2	2	2	1		2
5	Multimodal Transportation System	3	3	2	2	2	1	2	2
6	Retail and E-commerce Supply Chain Management	3	3	2	2				2
7	Supply Chain Analytics (TCP)	3	3	2	2	1			2
8	Warehouse Automation and Management	3	3	2	2				2
SPECIALIZATION - BUSINESS ANALYTICS									
S. NO	**COURSE TITLE**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**
1	Artificial Intelligence for Business (TCP)	3	3	3	2				2
2	Functional Analytics	3	3	3	2				2
3	Digital Transformation for Organizational Growth	3	3	2	2	2	1		3
4	Tools for Business Analytics (TCP)	3	3	2	2				2
5	Business Intelligence through Data Engineering	3	2	2	2				2
6	Big Data Analytics	3	3	3	3	3	2	3	2
7	Block Chain Technology for Business Decisions	3	2	2	2			1	3

CURRICULUM - 2025
(CHOICE BASED CREDIT SYSTEM)

SEMESTER I								
S. No	**COURSE CODE**	**COURSE TITLE**	**CATEGORY**	**CONTACT PERIODS**	**L**	**T**	**P**	**C**
THEORY								
1	PBA3101	Individual and Group Dynamics in Organizations	FC	3	3	0	0	3
2	PBA3102	Accounting for Management	FC	4	3	1	0	4
3	PBA3103	Economic Analysis for Business	FC	3	3	0	0	3
4	PBA3104	Marketing Management I	FC	3	3	0	0	3
5	PBA3105	Information Management	FC	3	3	0	0	3
6	PBA3106	Quantitative Methods for Business Decisions	FC	4	3	1	0	4
PRACTICALS								
7	PBA3111	Advanced Excel and Visualization	FC	4	0	0	4	2
8	PBA3112	Legal Aspects of Business*	FC	2	0	0	2	1
SKILL DEVELOPMENT COURSES								
9	PBA3113	Soft Skills 1* (Professional Skills Development)	EEC	2	0	0	2	1
10	PBA3114	Business Communication I*	EEC	2	0	0	2	1
11	PBA3115	Industry Analysis*	EEC	2	0	0	2	1
TOTAL				**30**	**18**	**2**	**10**	**26**

No End Semester Examination. Only Continuous Evaluation.

SEMESTER II								
S. No	**COURSE CODE**	**COURSE TITLE**	**CATEGORY**	**CONTACT PERIODS**	**L**	**T**	**P**	**C**
THEORY								
1	PBA3201	Marketing Management II	PC	3	3	0	0	3
2	PBA3202	Financial Management	PC	3	3	0	0	3
3	PBA3203	Operations Management	PC	3	3	0	0	3
4	PBA3204	Human Resource Management	PC	3	3	0	0	3
5	PBA3205	Business Analytics	PC	3	3	0	0	3
6	PBA3261	Applied Operations Research (TCP)	PC	4	2	0	2	3
7	PBA3262	Research Methodology for Business (TCP)	PC	4	2	0	2	3
PRACTICALS								
8	PBA3211	Data Intelligence Laboratory	PC	2	0	0	2	1
SKILL DEVELOPMENT COURSES								
9		Cross Functional Elective*	EEC	3	1	0	2	2
10	PBA3212	Soft Skills II* (Employment Enhancement Skills)	EEC	2	0	0	2	1
11	PBA3213	Business Communication II*	EEC	2	0	0	2	1
TOTAL				**32**	**20**	**0**	**12**	**26**

No End Semester Examination. Only Continuous Evaluation.

SEMESTER III								
S. No	**COURSE CODE**	**COURSE TITLE**	**CATEGORY**	**CONTACT PERIODS**	**L**	**T**	**P**	**C**
THEORY								
1	PBA3301	Business and Corporate Strategy	PC	3	3	0	0	3
2		Program Elective 1 - Specialization 1	PE	3	3	0	0	3
3		Program Elective 2 - Specialization 1	PE	3	3	0	0	3
4		Program Elective 3 - Specialization 1	PE	3	3	0	0	3
5		Program Elective 1 - Specialization 2	PE	3	3	0	0	3
6		Program Elective 2 - Specialization 2	PE	3	3	0	0	3
7		Program Elective 3 - Specialization 2	PE	3	3	0	0	3
PRACTICALS								
		-	-	-	-	-	-	-
SKILL DEVELOPMENT COURSES								
8	PBA3216	Summer Internship / Rural Community Engagement	EEC	12	0	0	12	6
TOTAL				**33**	**21**	**0**	**12**	**27**

SEMESTER IV								
S. No	**COURSE CODE**	**COURSE TITLE**	**CATEGORY**	**CONTACT PERIODS**	**L**	**T**	**P**	**C**
THEORY								
1	PBA3401	Business Ethics and Corporate Governance	PC	3	3	0	0	3
2		Program Elective 4 - Specialization 1	PE	3	3	0	0	3
3		Program Elective 4 - Specialization 2	PE	3	3	0	0	3
PRACTICALS								
		-	-	-	-	-	-	-
SKILL DEVELOPMENT								
4	PBA3414	Innovation and New Product Development*	EEC	4	0	0	4	2
5	PBA3418	Final Semester Project	EEC	24	0	0	24	12
TOTAL				**43**	**15**	**0**	**28**	**23**

No End Semester Examination. Only Continuous Evaluation.

TOTAL NO OF CREDITS	**102**

L – Lecture periods per week **T** – Tutorial periods per week **P** – Practical periods per week
C – Credits **TCP** – Theory-cum Practical

CROSS FUNCTIONAL ELECTIVES								
S. No	**COURSE CODE**	**COURSE TITLE**	**CATEGORY**	**CONTACT PERIODS**	**L**	**T**	**P**	**C**
1	PBA3214	Business Analysis and Process Management	EEC	3	1	0	2	2
2	PBA3215	Entrepreneurship Development	EEC	3	1	0	2	2
3	PBA3219	Sustainable Development and ESG	EEC	3	1	0	2	2

SPECIALIZATION - MARKETING								
S. No	**COURSE CODE**	**COURSE TITLE**	**CATEGORY**	**CONTACT PERIODS**	**L**	**T**	**P**	**C**
1	PBA3321	Advertising and Digital Marketing	PE	3	3	0	0	3
2	PBA3322	B2B Technology Sales Management	PE	3	3	0	0	3
3	PBA3323	Brand Management	PE	3	3	0	0	3
4	PBA3324	Consumer Behaviour and Analytics	PE	3	3	0	0	3
5	PBA3325	Digital Customer Relationship Management	PE	3	3	0	0	3
6	PBA3326	International Marketing	PE	3	3	0	0	3
7	PBA3327	Services Marketing	PE	3	3	0	0	3
8	PBA3328	Marketing Research	PE	3	3	0	0	3
9	PBA3329	Multi-Channel Sales Management	PE	3	3	0	0	3
10	PBA3421	Retail Management	PE	3	3	0	0	3
11	PBA3422	Marketing Analytics	PE	3	3	0	0	3
12	PBA3423	Social Media and Web Analytics	PE	3	3	0	0	3

SPECIALIZATION - FINANCE								
S. No	**COURSE CODE**	**COURSE TITLE**	**CATEGORY**	**CONTACT PERIODS**	**L**	**T**	**P**	**C**
1	PBA3331	Banking and Fintech Services	PE	3	3	0	0	3
2	PBA3332	Financial Statement Analysis	PE	3	3	0	0	3
3	PBA3333	Security Analysis and Portfolio Management	PE	3	3	0	0	3
4	PBA3334	Strategic Restructuring and Sustainable Finance	PE	3	3	0	0	3
5	PBA3335	Financial Cybersecurity and Fraud Management	PE	3	3	0	0	3
6	PBA3461	Financial Analytics (TCP)	PE	3	3	0	0	3
7	PBA3425	Behavioral Finance	PE	3	3	0	0	3
8	PBA3462	Financial Modelling and Analysis (TCP)	PE	3	3	0	0	3

SPECIALIZATION – HUMAN RESOURCE MANAGEMENT								
S. No	**COURSE CODE**	**COURSE TITLE**	**CATEGORY**	**CONTACT PERIODS**	**L**	**T**	**P**	**C**
1	PBA3336	Compensation Management	PE	3	3	0	0	3
2	PBA3337	Competency Framework for Manager Development	PE	3	3	0	0	3
3	PBA3338	HR Operations and Automations	PE	3	3	0	0	3
4	PBA3339	Strategic Human Resource Management	PE	3	3	0	0	3
5	PBA3341	People Analytics	PE	3	3	0	0	3
6	PBA3342	Talent Acquisition and Management	PE	3	3	0	0	3
7	PBA3343	Industrial Relations and Labour Laws	PE	3	3	0	0	3
8	PBA3427	Organization Theory, Structure and Design	PE	3	3	0	0	3
9	PBA3428	Managerial and Behavioural Ethics	PE	3	3	0	0	3

SPECIALIZATION – OPERATIONS								
S. No	**COURSE CODE**	**COURSE TITLE**	**CATEGORY**	**CONTACT PERIODS**	**L**	**T**	**P**	**C**
1	PBA3361	Project Management (TCP)	PE	4	2	0	2	3
2	PBA3362	Supply Chain and Logistics Management (TCP)	PE	4	2	0	2	3
3	PBA3344	Service Operations Management	PE	3	3	0	0	3
4	PBA3345	Operations Research Applications	PE	3	3	0	0	3
5	PBA3346	Operations Strategy	PE	3	3	0	0	3
6	PBA3347	Sales and Operations Planning	PE	3	3	0	0	3
7	PBA3463	Supply Chain Analytics (TCP)	PE	4	2	0	2	3
8	PBA3429	Behavioral Operations Management	PE	3	3	0	0	3

SPECIALIZATION – SUPPLY CHAIN								
S. No	**COURSE CODE**	**COURSE TITLE**	**CATEGORY**	**CONTACT PERIODS**	**L**	**T**	**P**	**C**
1	PBA3361	Project Management (TCP)	PE	4	2	0	2	3
2	PBA3362	Supply Chain and Logistics Management (TCP)	PE	4	2	0	2	3
3	PBA3348	Digital Innovation and Technology in SCM	PE	3	3	0	0	3
4	PBA3349	Procurement and Materials Management	PE	3	3	0	0	3
5	PBA3351	Multimodal Transportation System	PE	3	3	0	0	3
6	PBA3352	Retail and E-commerce Supply Chain Management	PE	3	3	0	0	3
7	PBA3463	Supply Chain Analytics (TCP)	PE	4	2	0	2	3
8	PBA3431	Warehouse Automation and Management	PE	3	3	0	0	3

SPECIALIZATION – BUSINESS ANALYTICS								
S. No	**COURSE CODE**	**COURSE TITLE**	**CATEGORY**	**CONTACT PERIODS**	**L**	**T**	**P**	**C**
1	PBA3363	Artificial Intelligence for Business (TCP)	PE	4	2	0	2	3
2	PBA3353	Functional Analytics	PE	3	3	0	0	3
3	PBA3354	Digital Transformation for Organizational Growth	PE	3	3	0	0	3
4	PBA3364	Tools for Business Analytics (TCP)	PE	4	2	0	2	3
5	PBA3355	Business Intelligence through Data Engineering	PE	3	3	0	0	3
6	PBA3432	Big Data Analytics	PE	3	3	0	0	3
7	PBA3433	Block Chain Technology for Business Decisions	PE	3	3	0	0	3

R-2025 CREDIT DISTRIBUTION SUMMARY

S. No	**Subject Area**	**Credits per Semester**				**Credits Total**
		I	**II**	**III**	**IV**	
1	FC	23				23
2	PC		22	3	3	28
3	PE			18	6	24
4	EEC	3	4	6	14	27
Total		**26**	**26**	**27**	**23**	**102**

FC - Foundation Core
PC - Professional Core
PE - Professional Elective
EEC - Employment Enhancement Courses

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3101	INDIVIDUAL AND GROUP DYNAMICS IN ORGANIZATIONS	3	0	0	3

LEARNING OUTCOMES

CO1	Appreciate the fundamental concepts and importance of individual and group dynamics in the workplace.
CO2	Explain the basic concepts and theories of individual and group dynamics.
CO3	Apply the individual and group dynamics concepts in a business context.
CO4	Analyze the different choices a person will have with the understanding of individual and group dynamics concepts.
CO5	Evaluate the impact of various individual and group dynamics metrics on organizational Key Performance Indicators (KPIs).

UNIT 1 INTRODUCTION TO INDIVIDUAL AND GROUP DYNAMICS 7

Introduction: Definition Organizational Behaviour (OB), Importance of individual and group dynamics in OB, Workforce diversity and its impact, Organizational Behaviour models and frameworks, individual and group dynamics metrics and KPIs.

UNIT 2 PERCEPTION AND INTERPERSONAL SENSITIVITY 9

Perception: Definitions, Stages in and factors affecting perceptual process, Perception in Leadership. The Attribution Theory of Perception, Managing biases, types of attributions, theories of attribution process. Social Perception: Factors affecting social perception, Self-fulfilling Prophecy and The Pygmalion Effect. Impression Management: Strategies, Techniques and Tactics.

UNIT 3 PERSONALITY, MOTIVATION AND INFLUENCING SKILLS 10

Johari Window, Transactional Analysis and its application in OB Big Five Personality Traits, HEXACO Model of Personality, and workplace behavior. Motivation: Definition, application. Importance and application of motivational theories: Content, process and others. Designing jobs to motivate people: Job design, theories and models, and techniques. Power and influence at the workplace: Bases of power, politics in Organizations.

UNIT 4 EMOTIONS, EMOTIONAL INTELLIGENCE AND LEADERSHIP 9

Workplace Emotions, Emotions and Mood, Emotional Intelligence (EI): Types and Theories. Leadership: Definition, theories and models. Visionary Leadership and Role of EI in leadership and decision-making.

UNIT 5 CONFLICT, NEGOTIATION AND STRESS MANAGEMENT 10

Conflict: Definition, types. The Conflict process: Intentions, Behavior and Outcomes. Negotiation: Process, strategies, individual differences in negotiation effectiveness, negotiating in a social context. Stress Management: Stress at work, Consequences, Management.

TOTAL 45 HOURS

TEXTBOOKS

1. Nishant Uppal and Sujit Sekhar Maharana, Contemporary Organizational Behavior, 1st Edition, Wiley India (2022).
2. Stephen P. Robins, Timothy A Judge, Neharika Vohra, Organisational Behavior, 18th Edition, Pearson Education, (Indian adaptation), 2022.

REFERENCE BOOKS

1. Nelson D.L, and Quick J.C, Organizational Behavior, 6th Edition, Cengage Learning (2024)
2. HBR Cases.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3102	ACCOUNTING FOR MANAGEMENT	3	1	0	4

LEARNING OUTCOMES

CO1	Comprehend and apply fundamental accounting principles, concepts and conventions to prepare final accounts.
CO2	Analyze corporate capital structure and financial statements using appropriate techniques to assess company performance.
CO3	Examine financial performance using ratio analysis and interpret cash flow statements to aid in effective management decisions.
CO4	Explain the concepts and tools of cost accounting and their relevance in managerial decision-making.
CO5	Demonstrate an understanding of the budgeting process and prepare budgets based on given information for financial planning and control.

UNIT 1 FUNDAMENTAL PRINCIPLES OF ACCOUNTING 9+3

Basics of Accounting – Accounting Principles, Concepts and Conventions – Final Accounts.

UNIT 2 CORPORATE ACCOUNTS & FINANCIAL STATEMENT ANALYSIS 9+3

Types of capital – Final Accounts of Companies - Distinction between the financial statements of firms and corporates – Problems on types of capital.

Uses, scope and limitations of financial statement analysis – Tools & Techniques – Comparative analysis – Common Size analysis – Trend analysis.

UNIT 3 FINANCIAL PERFORMANCE EVALUATION 9+3

Ratio Analysis – Meaning and definitions – Objectives – Limitations – Classification of Ratios. Cash flow – Meaning and definition – Cash from Operation, Investment and Financing Activities – Objectives – Advantages – Limitations – Procedure for preparing Cash Flow statement (AS-3).

UNIT 4 COST AND MANAGEMENT ACCOUNTING 9+3

Definitions – Objectives – Advantages and Limitations of Cost Accounting – Classification of Costs; Cost Unit, Cost Centre – Cost Sheet Preparation – Manufacturing Cost Statement – ABC costing, Job costing, Marginal costing – Applications in decision making – Standard costing.

UNIT 5 FINANCIAL PLANNING AND CONTROL **9+3**

Meaning of Budget – Characteristics – Essentials of Budget – Advantages and Limitations – Classification of Budgets – Budget Preparation Process – Forecasting Methods – Performance Budget – Zero Based budgets – Budgetary Controls.

TOTAL 60 HOURS

TEXTBOOKS

1. Ashish K. Bhattacharya, Financial Accounting for Business Managers, 5th Edition, Prentice-Hall of India Pvt. Ltd., 2006.
2. Needles, Powers and Crosson, Financial and Managerial Accounting, 9th Edition, Cengage Learning, 2015.
3. T.S.Reddy & Y.Hariprasad Reddy, Financial Accounting & Management Accounting, 4th Edition, Margham Publications, 2008.
4. R. Narayanaswamy, Financial Accounting- A Managerial Perspective, 5th Edition, Prentice- Hall of India Pvt. Ltd., 2002.

REFERENCE BOOKS

1. Robert N. Anthony, David F. Hawkins, Kenneth A. Merchant, Accounting Text &Cases, 13th Edition, Tata Mc Graw Hill Publishing Co. Ltd., 2003.
2. Horngren, Sundem, Elliott, Introduction to Financial Accounting, 11th Edition, Pearson Education, 2005.
3. Ambrish Gupta, Financial Accounting for Management, 5th Edition, Pearson Education, 2005.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3103	ECONOMIC ANALYSIS FOR BUSINESS	3	0	0	3

LEARNING OUTCOMES

CO1	Describe demand and supply conditions and explain their role in business decision-making.
CO2	Familiarize students with the production and cost structure analysis under different stages of production.
CO3	Able to identify and analyze competition strategies, including costing, pricing, product differentiation, and market environment according to the nature of products and the structures of the markets.
CO4	Analyze elements of factor market and determine cost of each element.
CO5	Gain the knowledge of macroeconomics such as national income and its determinants besides implications of inflation, trade cycle on the business prospects of the firm.

UNIT 1 INTRODUCTION **9**

General Foundations of Business Economics - Economic Thinking Process - Circular Flow of Economic Activities - Law of Demand - Demand Analysis and Estimation - Individual, Market and Firm demand - Determinants of demand - Elasticity measures and Business Decision Making - Demand Forecasting. (Theory of Demand) – Law of Supply – Determinants of supply – Price Elasticity of Supply (Theory of Supply).

UNIT 2 PRODUCTION FUNCTION AND COST ANALYSIS **9**

Law of Variable Proportions – Production Function – Marginal Products – Law of Diminishing Returns – Returns to Scale - Production Functions in the Short and Long Run – Productivity and Aggregate Production - Cost Functions – Determinants of Costs – Economic Analysis of Costs - Cost Forecasting
- Short Run and Long Run Costs – Type of Costs – Opportunity Cost and Markets. (Theory of production).

UNIT 3 MARKET STRUCTURES AND PRICING STRATEGIES **9**

Pricing with Market Power - Product Markets - Determination Under Different Markets - Market Structure – Perfect Competition – Monopoly – Monopolistic Competition – Duopoly - Oligopoly - Pricing and Employment of Inputs Under Different Market Structures – Price Discrimination - Degrees of Price Discrimination. Incentives, Information and Market Structure. (Theory of market structures and consumer behavior).

UNIT 4 FACTOR MARKETS AND ECONOMIC RETURNS **9**

Factor Markets – How to determine Income – Income and Wealth – Input pricing by Marginal Productivity – Labor Market – fundamentals of Wage determination – labor Market Issues and Policies – Economics of Natural Resources – Environmental Economics – Basic concepts of Capital, Interest and Profits – Theory of Capital, Interest and Profits – Law of Diminishing Returns – determination of Interest and Return on Capital.

UNIT 5 NATIONAL INCOME AND MACROECONOMIC INDICATORS **9**

Introduction to National Income – Measuring Economic Activity - National Income Concepts - Models of National Income Determination - Economic Indicators - Technology and Employment – Inflation and Unemployment – Consumption – Savings – Investments - Issues and Challenges – Business Cycles – Phases – Management of Cyclical Fluctuations. – Government Taxation and Expenditure - Fiscal and Monetary Policies. (Macroeconomics).

TOTAL 45 HOURS

TEXTBOOKS

1. Paul A Samuelson and William D Nordhaus "Economics – Indian Adaptation" by McGraw Hill Education.
2. Deviga Vengedasalam and Karunagaran Madhavan "Principle of Economics" by Oxford Publications.

REFERENCE BOOKS

1. Trefor Jones "Business Economics and Managerial Decision Making" by Wiley.
2. James R. McGuigan, R. Charles Moyer, and Frederick H.deB. Harris" Managerial Economics: Applications, Strategies, and Tactics" by Thomson.
3. Michael Baye and Jeff Prince "Managerial Economics & Business Strategy" by McGraw Hill Education.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3104	MARKETING MANAGEMENT I	3	0	0	3

LEARNING OUTCOMES

CO1	Explain the fundamentals of marketing, including customer needs, managing customer relationships, and analyzing the marketing environment, with an emphasis on sustainable marketing and ethical practices.
CO2	Develop the ability to assess marketing information needs and the importance of marketing research, leverage big data, analytics, and artificial intelligence for informed decision-making.
CO3	Explore consumer and business buying behaviors, decision-making processes, and how digital and social marketing influence buying decisions.
CO4	Learn how to identify, assess, and strategically manage competitors while formulating competitive strategies to achieve and sustain market leadership.
CO5	Gain proficiency in market segmentation, targeting, differentiation, and positioning to effectively create and communicate value to target customers.

UNIT 1 INTRODUCTION TO MARKETING 9

Understanding the marketplace and customer needs - Managing Customer Relationships and Customer Values - Changing Marketing Landscape – Company and Marketing Strategy – Company-Wide Strategic Planning – Business Portfolio Analysis – Marketing Strategy and Marketing Mix – Analyzing the Marketing Environment – Macro and Microenvironment – Sustainable Marketing – Social Responsibility and Ethics.

UNIT 2 MANAGING MARKETING INFORMATION TO GAIN CUSTOMER INSIGHTS 9

Marketing Information and customer Insights – Assessing information needs and developing data – Marketing Research – Defining the Problem and Research Objectives – Developing the research Plan – Gathering Secondary Data – Primary Data Collection – Analyzing and Using Marketing Information – Big Data – Marketing Analytics and Artificial Intelligence in Marketing Decisions.

UNIT 3 CONSUMER MARKETS AND BUYING BEHAVIOUR **9**

Model of Consumer Behaviour – Characteristics affecting Consumer Behaviour – The Buying Decision Process and Types of Buying Decision Behaviour – Buying Decision Process for New Products – Business Markets – Business Buying Behaviour – Business Buying Decision Process – Engaging Business Buyers with Digital and Social Marketing.

UNIT 4 CREATING COMPETITIVE ADVANTAGE **9**

Competitor Analysis – Identifying Competitors – Assing Competitors – Selecting Competitors to Attach or Avoid – Designing a Competitive Intelligence System – Competitive Strategies – Competitive Positions – Market Leader Strategies – Market Challenger Strategies – Market Follower Strategies – Market Nicher Strategies – Balancing Customer and Competitor Orientations.

UNIT 5 CREATING VALUE FOR TARGET CUSTOMERS **9**

Market Segmentation – Segmenting Consumer Markets – Segmenting Business Markets – Segmenting International Markets – Market Targeting – Differentiation and Positioning – Positioning Maps.

TOTAL 45 HOURS

TEXTBOOKS

1. Principles of Marketing, Philp Kotler, Gary Armstrong, Sridhar Balasubramanian, Prafulla Agnihotri, Pearson, 19th Edition.

REFERENCE BOOKS

1. Global Marketing Management, Warren J. Keegan, Pearson, 8th Edition.
2. Marketing Management, V. S. Ramaswamy and S. Namakumari, Sage, 6th Edition.
3. Digital Marketing, Seema Gupta, Mc Graw Hill, 3rd Edition (2022).
4. Digital Marketing, Dr. Satinder Kumar, Dr. Supreet Kaur, Taxmann Publications Private Limited, 2023.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3105	INFORMATION MANAGEMENT	3	0	0	3

LEARNING OUTCOMES

CO1	Demonstrate an understanding of information systems concepts, differentiate data from information, and analyze the roles of various business information system types.
CO2	Compare database types, comprehend database management systems, and examine the impact of big data on decision-making.
CO3	Classify analytical tools and appreciate the importance of knowledge management, decision-making, and business analytics.
CO4	Gain hands-on exposure to Scrum and Kanban methodologies used in real-world project management scenarios.
CO5	Analyze emerging technologies, cybersecurity risks, and the impact of AI and ML on business and ethics.

UNIT 1 INTRODUCTION TO INFORMATION SYSTEMS 9

Definition of Information Systems (IS) - Differentiating Data and Information - Business Objectives of IS - Business Processes and IS - Types of IS - Transaction Processing Systems (TPS) - Management Information Systems (MIS) - Decision Support Systems (DSS) - Executive Support Systems (ESS) - Enterprise Applications.

Case Study: Application of MIS in Large Enterprises.

UNIT 2 DATABASE AND INFORMATION MANAGEMENT 9

Traditional File Approach vs. Database Approach - Database Management Systems (DBMS) - Relational Database Management Systems (RDBMS) - Database Design - Entity-Relationship (ER) Diagram - Normalization - Structured Query Language (SQL) - Non-Relational Databases and Distributed Databases - Introduction on Mongo DB and No SQL DB - Big Data Concepts and Applications - Data Warehouses and Data Marts - Introduction to Semi Structured Data – XML - Meta Data Management - Introduction to Data Lake.

Case Study: How Big Data Transforms Decision-Making.

UNIT 3 KNOWLEDGE MANAGEMENT AND DECISION-MAKING **9**

Types of Knowledge: Explicit vs. Tacit - Knowledge Management (KM) Value Chain – Decision Making Process and Models - Business Intelligence (BI) - Business Analytics Tools Case Study: The Role of Business Analytics in Competitive Strategy.

UNIT 4 DEVELOPING INFORMATION SYSTEMS **9**

System Development Life Cycle (SDLC) - System Development Methodologies: Structured vs. Object-Oriented - Prototyping and Agile Development - Scrum and Kanban Methodologies - Software Packages and Enterprise Software Implementation - Outsourcing IS Development.

Case Study: Implementing Agile and Scrum in Enterprise IS Development.

Mini Project: Developing a Mini Information System.

UNIT 5 NEW IT TRENDS AND IS SECURITY **9**

Cloud Computing and Pervasive Computing - Internet of Things (IoT) and Blockchain Technology - AI and Machine Learning in Information Systems - Ethical Issues in IT - Threats to IS and Security Measures - Cybersecurity Best Practices.

Case Study: Cybersecurity Failures and Lessons Learned.

Industry Example: AI and Machine Learning Applications in Fraud Detection and Predictive Analytics.

TOTAL 45 HOURS

TEXTBOOKS

1. Kenneth C. Laudon, and Jane P. Laudon, Management Information Systems: Managing the digital firm, 16th Edition, Pearson, 2020.

REFERENCE BOOKS

1. Kelly Rainer, Brad Prince and Hugh Watson, Management Information Systems, 4thEdition, Wiley India, 2016.
2. Ralph M. Stair, George W. Reynolds, and Thomas Chesney, Principles of Business Information Systems, 4th Edition, Cengage Learning, 2020.
3. Sharda Ramesh, Delen Dursun, Turban Efraim and David King, Business Intelligence: A Managerial Perspective on Analytics, 4th Edition, Pearson, 2019.
4. Waman S. Jawadekar and Sanjiva Shankar Dubey, Management Information System: Text and Cases, 6th Edition, McGraw Hill, 2020.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3106	QUANTITATIVE METHODS FOR BUSINESS DECISIONS	3	1	0	4

LEARNING OUTCOMES

CO1	Demonstrate and apply descriptive statistics & probability concepts in business decision-making.
CO2	Analyze probability distributions and statistical inference techniques to estimate business parameters.
CO3	Conduct parametric tests for hypothesis validation and business decision-making.
CO4	Evaluate non-parametric statistical tests for business applications when parametric assumptions are violated.
CO5	Apply predictive analytics techniques for business insights using correlation and regression models.

UNIT 1 INTRODUCTION- PROBABILITY 11+3

Introduction - Importance of Data in Decision making - Data set - Elements, Variables, observations, Types of Variables, Measures of Scale - Ungrouped Data - Grouped Data - Types of data used in business - Descriptive statistics - Measures of Central Tendency- Measures of Dispersion - Measures of Shape - Applications of Descriptive statistics in business - Probability - Applications of Probability in business, Basic concepts & Bayes theorem.

UNIT 2 PROBABILITY DISTRIBUTIONS AND STATISTICAL INFERENCE 8+3

Probability distribution - Binomial Distribution and Normal Distribution, Application of Sampling, Sampling Methods for Data collection - Concept of point and interval estimator - Estimation of point and interval estimator of mean for large sample and Determining Sample size.

UNIT 3 PARAMETRIC TESTS 10+3

Methodology of Hypothesis Testing - Introduction to parametric tests - One sample test of hypotheses - Two sample test of Hypotheses - Tests of Two independent large sample mean, Tests for independent Small sample mean, Test for Difference between means: Dependent samples Paired sample test - One-way analysis of variance ANOVA - Application of two way ANOVA (only).

UNIT 4 NONPARAMETRIC TESTS **9+3**

Parametric Vs Non-Parametric tests - Chi square test - Rank sum tests - Mann-Whitney and Kruskal-Wallis test and Kolmogorov-Smirnov test.

UNIT 5 PREDICTIVE ANALYSIS **7+3**

Correlation: Karl Pearson's correlation & Spearman's Rank correlation - Simple linear regression - Concept and applications of multiple regression and logistic regression (only).

TOTAL 60 HOURS

REFERENCE BOOKS

1. ND Vohra, Business Statistics: Text and Problems, 2nd Edition, Mc Graw Hill.
2. Ken Black & Sanjeet Singh, Business Statistics for contemporary Decision - Making: 10th Edition, Wiley.
3. Richart I Levin, David S Rubin, Sanjay Rastogi, Masood Husain Siddiqui, Statistics of Management, 7th Edition, Pearson.
4. TN Srivastava and Shailaja Rego, Statistics for Management, 2nd Edition, Mc Graw Hill.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3111	ADVANCED EXCEL AND VISUALIZATION	0	0	4	2

LEARNING OUTCOMES

CO1	Apply advanced Excel functions, data validation techniques, and what-if analysis to efficiently handle business data and optimize decision-making.
CO2	Utilize Pivot Tables, reporting tools, and automation techniques, including VBA macros, to streamline data processing and enhance reporting efficiency.
CO3	Develop dynamic and insightful data visualizations using industry-standard tools to identify key business trends, optimize performance, and support strategic decisions.
CO4	Design interactive visualization dashboards and compelling data narratives that transform complex datasets into actionable business intelligence, improving decision- making and communication.

UNIT 1 ADVANCED EXCEL FUNCTIONS, DATA VALIDATION, AND WHAT-IF ANALYSIS **10**

Lookup and Reference Functions: VLOOKUP, HLOOKUP, INDEX, MATCH, XLOOKUP – Creating Smooth User Interface Using Lookup – Nested VLOOKUP – Reverse Lookup using Choose Function – Worksheet Linking using Indirect – VLOOKUP with Helper Column.

Data Validation: Specifying a valid range of values for a cell – Specifying a list of valid values for a cell – Specifying custom validations based on formulas for a cell – Dynamic Dropdown List Creation using Data Validation – Dependent Dropdowns – Conditional Formatting based on Data Validation.

What-If Analysis: Goal Seek – Data Tables – Scenario Manager – Solver Tool – Sensitivity Analysis.

UNIT 2 PIVOT TABLES AND REPORTING **10**

Pivot Tables: Creating and Formatting Pivot Tables – Basic and Advanced Value Field Settings – Choosing Fields – Modifying PivotTable Data – Grouping Based on Numbers and Dates – Calculated Fields & Calculated Items.

Filtering and Data Aggregation in Pivot Tables: Using Filters and Slicers – Conditional Filtering – Summarizing Data with PivotTables – Using PivotTable Calculations for Data Insights.

Advanced Pivot Table Features**:** Using GETPIVOTDATA for Custom Reports – Connecting Multiple PivotTables with Slicers – Automating PivotTable Updates.

UNIT 3 EXCEL DASHBOARD AND VBA MACROS 10

Excel Dashboards: Planning a Dashboard – Adding Tables and Charts to a Dashboard – Adding Dynamic Contents – Using Slicers, Timelines, and Form Controls – Linking Dashboards to External Data Sources – Creating KPI-Based Dashboards.

Basic VBA Macros**:** Introduction to Macros – Recording a Macro – Assigning Macros to Buttons – Automating Repetitive Tasks Using Macros.

UNIT 4 DATA VISUALIZATION FUNDAMENTALS & DATA PREPARATION 15

Introduction to Data Visualization: Importance of Data Visualization – Overview of Power BI & Tableau – Understanding Interface & Components – Connecting to Data Sources (Excel, CSV, SQL, Web) – Importing and Managing Data.

Data Preparation & Transformation: Handling Missing Data – Cleaning & Formatting Data – Creating Relationships Between Tables – Data Blending (Tableau) / Data Modelling (Power BI) – Using Power Query for Data Cleaning.

Basic Charts & Visualizations: Creating Bar Charts, Line Charts, Pie Charts, and Scatter Plots – Conditional Formatting in Charts – Using Filters, Slicers, and Drill-Downs for Interactive Reporting. Calculated Fields & Measures: Creating Custom Calculated Fields – DAX Formulas in Power BI – Table Calculations in Tableau – Using Aggregations for Data Analysis.

UNIT 5 ADVANCED VISUALIZATIONS, DASHBOARD DESIGN &STORYTELLING 15

Advanced Visualizations: Creating Dual-Axis and Combo Charts – Heatmaps, Tree Maps, and Waterfall Charts – Geospatial Visualizations (Maps & Location Analytics) – Trend Analysis & Forecasting Techniques.

Dashboard Design Principles: Planning & Designing an Effective Dashboard – Best Practices for Data Storytelling – Creating KPI Cards, Custom Visuals, and Interactive Elements.

Building Interactive Dashboards: Creating Dashboards with Power BI/Tableau – Using Slicers, Filters, and Parameters for Dynamic Reports – Linking Multiple Visuals with Actions – Implementing Drill-Through and Tooltips.

Storytelling with Data**:** Designing Dashboards for Business Insights – Creating Interactive Storyboards in Tableau – Publishing and Sharing Reports in Power BI Service / Tableau Public. Developing a Sales & Revenue Dashboard – Creating a Financial Performance Report – Implementing Market Segmentation & Customer Analytics.

TOTAL 60 HOURS

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3112	LEGAL ASPECTS OF BUSINESS	0	0	2	1

LEARNING OUTCOMES

CO1	Examine the legal and institutional frameworks that govern business operations, including constitutional provisions, contracts, and corporate laws.
CO2	Analyze legal and regulatory risks related to company governance, technology, environment, and trade, and evaluate their business implications.
CO3	Evaluate how non-market strategies, such as advocacy and stakeholder engagement, shape legal compliance and policy outcomes in business.

UNIT 1 INTRODUCTION TO BASIC ASPECTS OF LAW, LEGAL SYSTEM AND BUSINESS 6

Introduction to Law and Law Making, Rules and regulations, constitutional aspects of business - Hierarchical structure of courts and Basic Procedures Judicial and Quasi - Judicial bodies - Jurisdiction, Writ Petition – ADR - Mediation, negotiation - Introduction to Law and Contracts, with Specific reference to complex Corporate Contracts - Consumer Protection and business.

UNIT 2 ORGANIZATIONAL RISK – UNDERSTANDING COMPANIES AND THE LAW RELATED TO GOVERNANCE OF COMPANIES 6

Introduction to Basics of Company Law - Organizational Risks in running a company - Role of Directors, KMP, and their responsibility under the Companies Act 2013 - Corporate Governance - Best Governance practices - Corporate Criminal Liability - SEBI, CCI, IBB.

UNIT 3 TECHNOLOGY RISK AND THE LAW IN INDIA 6

Data Protection in India - Principles of data protection - Regulatory risk in India - IPR risk and challenges - Patents, trademarks, trade secrets and copyrights.

UNIT 4 ENVIRONMENT, LABOUR &TRADE - RISKS AND THE INTERACTION BETWEEN LAW AND POLICY 7

The Intersection of Risk and Environmental Regulations - The Bhopal Gas Tragedy - Emergence of a New Norm in Governing Companies – ESG - Decision-making pertaining to environmental risks - Sustainable development - Workplace Safety, Health Risks, and Standards - Meaning and types of trade risks. Tariffs and Non-Tariffs - Trade wars and Economic Sanctions - Geopolitical risks - Tax havens - Tax planning and Tax evasion.

UNIT 5 NON-MARKETING STRATEGY 5

Non-market strategy refers to a firm's actions and decisions that influence the regulatory and policy environment in which it operates - Lobbying and advocacy - Public affairs and government relations- Regulatory engagement and compliance - Stakeholder engagement and management - Policy research and analysis - Various ideas of risk and connecting them to what amounts to a non-market strategy that interacts with law and policy frameworks - Introducing the 4-I Framework; Deep dive into the first two I-s of the 4-I framework, namely Issues and Interest groups - Deep dive into the remaining two I- s, namely Institutions and Information.

TOTAL 30 HOURS

REFERENCE BOOKS

1. Consumer Protection Act: A Commentary by G.B. Reddy and Baglekar Akash Kumar.
2. Indian Contract Act by R.K. Bangia.
3. Company Law by H K Saharay.
4. Intellectual Property Rights: Infringement and Remedies by Dr. Ananth Padmanabhan.
5. Raghu Garud et al., Liminal movement by digital platform-based sharing economy ventures: The case of Uber Technologies, STRAT. MGMT. JOURNAL (2020).
6. Anna Massoglia and Joanne Haner, TikTok's last dance? The lobbying showdown over the app's future in the U.S. continues.
7. David P. Baron, Integrated Strategy: Market and Nonmarket Components, 37 CALIF. MGMT. REV.47 (1995).
8. David P. Baron, The Nonmarket Strategy System, 37 MIT SLOAN MGMT. REV. 73 (1995).

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3113	SOFT SKILLS I (PROFESSIONAL SKILL DEVELOPMENT)	0	0	2	1

LEARNING OUTCOMES

CO1	Develop the ability to comprehend written material and apply critical thinking skills for analyzing media and text.
CO2	Engage effectively in structured group discussions and book reviews on contemporary topics.
CO3	Demonstrate initiative and responsibility in individual and group learning contexts.
CO4	Participate meaningfully in peer learning and collaborative educational activities.

UNIT 1 MEDIA REVIEW AND COMPREHENSION SKILLS 6

Reading newspapers and online articles for key ideas and themes - Analyzing editorials and opinion columns - Building vocabulary through media - Summarizing and paraphrasing content - Exercises to distinguish facts from opinions.

UNIT 2 CRITICAL THINKING THROUGH CONTEMPORARY ISSUES 6

Introduction to critical analysis - Exploring current events and global issues - Identifying perspectives and bias in news - Argument construction and evaluation - Structured critique writing and discussion.

UNIT 3 GROUP DISCUSSIONS AND BOOK REVIEWS 6

Fundamentals of group discussions - Communication etiquette and listening skills - Organizing and delivering book reviews - Speaking with clarity and confidence - Mock GDs on contemporary themes.

UNIT 4 INITIATIVE AND PERSONAL LEADERSHIP 6

Understanding initiative in personal and academic contexts - Taking responsibility in teams – Decision-making and problem-solving - Case-based discussions on leadership - Reflection journals on initiative.

UNIT 5 PARTICIPATORY AND COLLABORATIVE LEARNING 6

Introduction to participatory learning - Peer-to-peer facilitation techniques - Feedback and learning from others - Collaborative project or group activity - Final reflection and self-assessment.

TOTAL 30 HOURS

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3114	BUSINESS COMMUNICATION I	0	0	2	1

LEARNING OUTCOMES

CO1	Understand and express basics of effective business communication and cross-cultural communication.
CO2	Recognize good practices of creating and delivering presentations effectively.
CO3	Understand techniques of delivering speeches in professional settings.
CO4	Recognize the role of technology in enabling effective written communication.

UNIT 1 BASICS OF BUSINESS COMMUNICATION **6**

Introduction to Business Communication – Importance - Principles of effective communication, Barriers to Communication - Reading Skills - Listening - Principles of Nonverbal Communication: Professional dressing and body language. Technology and Communication- Introduction.

UNIT 2 TECHNOLOGY AND WRITTEN BUSINESS COMMUNICATION **6**

Job application letters, proposals. Internal communication through email - notices, circulars, memos, agenda and minutes.

UNIT 3 EFFECTIVE PRESENTATIONS **6**

Principles of Effective Presentations, Presentation Do's and Don'ts, Principles governing the use of audiovisual media. Body language during presentation delivery.

UNIT 4 SPEAKING IN PROFESSIONAL SETTINGS-1 **6**

Types of managerial speeches – Extempore - speech of introduction, speech of thanks, occasional speech, theme speech.

UNIT 5 CROSS CULTURAL COMMUNICATION **6**

Basics of Cross-Cultural communication - Hofstede's dimensions - Cultural sensitivity.

TOTAL 30 HOURS

REFERENCE BOOKS

1. Bovee, Thill &Schatzman, Business Communication Today, 13th edition, Pearson.
2. Nageshwar Rao and Rajendra Das, Business skills, HPH.
3. Lesikar, R.V. &Flatley, M.E. Basic Business Communication – Connecting in a digital world, 13thEdition, McGraw Hill Publishing Company Ltd.
4. John Seely, Oxford Guide to Effective Writing and Speaking, 3rd edition, Oxford Publishing.
5. M Ashraf Rizvi, Effective Technical Communication,.2ndEdition, TMH.
6. Meenakshi Raman and Sangeeta Sharma, Technical Communication, 3rdEdition, Oxford Publishing.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3115	INDUSTRY ANALYSIS	0	0	2	1

LEARNING OUTCOMES

CO1	Develop an understanding of how various factors influence business operations and industry dynamics.
CO2	Build an analytical approach to conduct the industry analysis for a given industry.

UNIT 1 BUSINESS ENVIRONMENT AND INTRODUCTION TO FRAMEWORKS 6

Understanding macro and micro business environments – Introduction to industry analysis – Relevance of industry structure and dynamics – Overview of analytical thinking – Introduction to key frameworks: PESTLE and Porter's Five Forces.

UNIT 2 PESTLE FRAMEWORK ANALYSIS 8

Detailed exploration of PESTLE framework: Political, Economic, Social, Technological, Legal, and Environmental – Analyzing real-world events through the PESTLE lens – Applications in contemporary industries – Group discussions on recent trends impacting industries.

UNIT 3 PORTER'S FIVE FORCES FRAMEWORK 8

Understanding Porter's model: Industry rivalry, Threat of new entrants, Bargaining power of suppliers and buyers, and Threat of substitutes – Applying the framework to assess competitiveness – Case studies of sectors like FMCG, IT, and Retail – Industry-level insights.

UNIT 4 ARENA MODEL AND INDUSTRY MAPPING 8

Overview of the ARENA model – Visual mapping of industry structure and components – Use cases and applications – Integrating findings from PESTLE and Porter's frameworks into a comprehensive analysis. Group-based industry analysis project – Application of frameworks to chosen industries – Student presentations and peer feedback – Discussion on findings, challenges, and insights from the process.

TOTAL 30 HOURS

METHODOLOGY

Hands-on experience of carrying out the Industry Analysis through group projects and presentations.

METHODOLOGY: STEP-BY-STEP APPROACH

1. **Formation of Groups**:
    - Students will be divided into small teams to encourage collaborative learning.
    - Each group will select or be assigned a contemporary industry to analyze.

2. **Introduction to Frameworks:**
    - Sessions will cover PESTLE analysis and Porter's Five Forces framework in detail.
    - Real-world case studies will be used to illustrate practical applications.

3. **Industry Selection & Preliminary Research:**
    - Groups will conduct background research on their chosen industry.
    - They will gather relevant data on external and internal factors affecting the industry.

4. **Application of Analysis Frameworks:**
    - Groups will apply PESTLE analysis and Porter's Five Forces to analyze external environmental influences.
    - They will use PESTLE analysis and Porter's Five Forces to assess competitive dynamics within the industry.
    - Representation of Industry Analysis through ARENA model.

5. **Group Presentations & Peer Review:**
    - Each group will present their industry analysis to the class.
    - Other students will engage in peer discussions and provide feedback.
    - Class participation during discussions and Q&A will be recorded for evaluation.

CO PO MAPPING

	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**
CO1	3	2	1	3	3	2	1	3
CO2	3	3	2	3	3	2	1	3

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3201	MARKETING MANAGEMENT II	3	0	0	3

LEARNING OUTCOMES

CO1	Analyze the nature and characteristics of products, services, and experiences, and apply product mix and life-cycle strategies in marketing decisions.
CO2	Evaluate major pricing strategies, factors affecting pricing decisions, and various product pricing approaches to ensure profitability and market sustainability.
CO3	Assess the role of retailing, wholesaling, and omni-channel marketing in delivering value to customers efficiently.
CO4	Design and execute effective promotional campaigns using personal selling, sales promotion, and other communication tools to enhance brand positioning.
CO5	Appreciate data-driven digital marketing campaigns, evaluate advertising effectiveness, and explore the applications of AI in modern marketing.

UNIT 1 PRODUCTS, SERVICES AND BRANDS **9**

Products, services and experiences – product and service decisions – product mix decisions – Services Marketing – Nature and Characteristics – Branding – Developing New Products – New Product Development Process – Product Life-Cycle Strategies.

UNIT 2 PRICING **9**

Major Pricing Strategies – Factors affecting Price Decisions – New Product Pricing Strategies – Product Mix Pricing Strategies – Price Adjustment Strategies – Price Changes – Public Policy and Pricing, applications of AI in Dynamic/Surge Pricing.

UNIT 3 MARKETING CHANNELS **9**

Supply Chain and Value Delivery Network – Channel Behaviour and Organization – Channel Design Decisions – Channel Management Decisions – Marketing Logistics and Supply Chain Management – Retailing – Omni-Channel Marketing – Types of Retailing – Challenges and Trends – Wholesaling – Types of Wholesalers – B2B Tech Sales Management.

UNIT 4 INTEGRATED MARKETING COMMUNICATION 9

The Promotion Mix - Integrated Marketing Communications – Developing Effective Marketing Communication – Setting the Total Promotion Budget and Mix – Personal Selling – Managing Sales Force – Personal Selling Process – Sales Promotion – Major Sales Promotion Tools - Public Relations – The Role and Impact of PR – Major Public Relations Tools.

UNIT 5 ADVERTISING AND DIGITAL MARKETING 9

Advertising – Major Advertising Decisions – Setting Objectives – Setting Advertising Budget – Developing Advertising Strategy – Evaluating Advertising Effectiveness and Return on Advertising Investment – Other Considerations –- Understanding Digital Marketing – Preparing a Digital Marketing Campaign – Employing Digital Channels in an Omni-Channel Strategy – Artificial Intelligence in Digital Marketing.

TOTAL 45 HOURS

TEXTBOOKS

1. Principles of Marketing, Philp Kotler, Gary Armstrong, Sridhar Balasubramanian, Prafulla Agnihotri, Pearson, 19th Edition.

REFERENCE BOOKS

1. Global Marketing Management, Warren J. Keegan, Pearson, 8th Edition.
2. Marketing Management, V. S. Ramaswamy and S. Namakumari, Sage, 6th Edition.
3. Digital Marketing, Seema Gupta, McGraw Hill, 3rd Edition (2022).
4. Digital Marketing, Dr. Satinder Kumar, Dr. Supreet Kaur, Taxmann Publications Private Limited, 2023.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3202	FINANCIAL MANAGEMENT	3	0	0	3

LEARNING OUTCOMES

CO1	Apply the fundamental principles of financial management to drive effective business decisions.
CO2	Analyze investment opportunities using capital budgeting techniques and determine the cost of capital for informed decision-making.
CO3	Examine leverage concepts to assess capital structure and use dividend decision models to determine optimal dividend policies.
CO4	Analyze working capital management principles and techniques for managing receivables, inventory, cash, and short-term financing.
CO5	Identify and describe the various long-term sources of finance, including shares, debentures, venture capital, and private equity.

UNIT 1 FOUNDATIONS OF FINANCE 9

Introduction to finance - Financial Management – Nature, scope and functions of Finance, organization of financial functions, objectives of financial management, major financial decisions – Time value of money – Discounting & Compounding – Features and valuation of shares and bonds – Concept of risk and return – single asset and portfolio with two assets.

UNIT 2 INVESTMENT DECISIONS 9

Capital Budgeting: Principles and techniques - Nature of capital budgeting- Identifying relevant cash flows - Evaluation Techniques: Payback, Accounting rate of return, Net Present Value, Internal Rate of Return, and Profitability Index - Comparison of DCF techniques.

Concept and measurement of cost of capital - Specific cost and overall cost of capital.

UNIT 3 FINANCING AND DIVIDEND DECISION 9

Leverages – Operating and Financial leverage – Measurement of leverages – Degree of operating & financial leverage – Combined leverage, EBIT– EPS Analysis – Indifference point. Capital structure – Theories – Net Income Approach, Net Operating Income Approach, MM Approach – Determinants of Capital structure. Dividend decision – Issues in dividend decisions, Importance, Relevance & Irrelevance theories – Walter's – Model, Gordon's model and MM model – Factors determining dividend policy – Types of dividend policies – forms of dividend.

UNIT 4 WORKING CAPITAL MANAGEMENT **9**

Principles of working capital: Concepts, Needs, Determinants, issues and finance.

UNIT 5 LONG TERM SOURCES OF FINANCE **9**

Indian capital and stock market – New issues market – Long-term finance: Shares, debentures and term loans, lease, hire purchase, venture capital financing, Private Equity.

TOTAL 45 HOURS

TEXTBOOKS

1. IM. Pandey Financial Management, Vikas Publishing House Pvt. Ltd., 11th edition, 2018.
2. M.Y. Khan and P.K. Jain Financial management, Text, Problems and cases Tata McGraw Hill, 8th edition, 2017.
3. Aswath Damodaran, Corporate Finance Theory and practice, John Wiley & Sons, 2011.

REFERENCE BOOKS

1. James C. Vanhorne –Fundamentals of Financial Management – PHI Learning, 13th Edition, 2014.
2. Brigham, Ehrhardt, Financial Management Theory and Practice, 14th edition, Cengage Learning 2015.
3. Prasanna Chandra, Financial Management, 9th edition, Tata McGraw Hill, 2017.
4. Srivatsava, Mishra, Financial Management, Oxford University Press, 2012.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3203	OPERATIONS MANAGEMENT	3	0	0	3

LEARNING OUTCOMES

CO1	Demonstrate an understanding of operations management, strategy, challenges, and sustainability.
CO2	Apply process, product, and service design for efficient operations.
CO3	Utilize forecasting, scheduling, MRP, and ERP for planning and control.
CO4	Evaluate sourcing, logistics, vendor management, and procurement strategies.
CO5	Apply quality management, Six Sigma, TQM, and process control techniques.

UNIT 1 INTRODUCTION TO OPERATIONS MANAGEMENT 9

Introduction to Operations – Goods Vs Service – Operations Management – A system Perspective - Functions and Challenges – Operations Strategy Framework – Measure of operational Excellence – Sustainability in Operations – World class manufacturing - Latest Trends and Challenges – Project Management Introduction.

UNIT 2 DESIGNING OPERATIONS 9

Process as unit of Measurement – Process redesign using BPR - Product Design – Approach - Design for manufacturing - Assembly - Environment – Capacity Planning – Strategy – Alternatives – Design of Process Layout – Production planning – Service design Framework / Blueprint.

UNIT 3 PLANNING AND CONTROL OF OPERATIONS 9

Demand Forecasting – Time Horizon – Techniques – Sales and Operations Planning – Master production Scheduling – Resource Planning Techniques - MRP - MPR II - ERP in planning process- Scheduling Techniques – Input – Output Control – Shop Floor Management – Automation of shop floors.

UNIT 4 SOURCING AND SUPPLY MANAGEMENT 9

Importance in Supply Chain in Operations – Strategy Framework – Design – Third Party Logistics – Purchasing Policies and Strategy - Agreements– Single source / Multi sourcing Make or Buy Decision
– E Procurement – Vendor Management - Selection, On Boarding and Rating Inventory Management
– Risks Lean Purchasing.

UNIT 5 FUNDAMENTALS OF QUALITY MANAGEMENT **9**

Importance of Quality Organization – Quality Gurus – Six Sigma Approach to Quality – TQM Concepts – Design of Robust Quality Assurance System – JIDOKA - Process Control fundamentals and Process capability - Cost of Poor Quality.

TOTAL 45 HOURS

TEXTBOOKS

1. Mahadevan B, "Operations Management -Theory and Practice",3rd Edition, Pearson Education, 2018.

REFERENCE BOOKS

1. Norman Gaither and Gregory Frazier, Operations Management, 9thEdition, South Western Cengage Learning, 2002.
2. Richard B. Chase, Ravi Shankar, Robert Jacobs; Operations & Supply Chain Management, 14th Edition, McGraw Hill (Special Indian), 2017.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3204	HUMAN RESOURCE MANAGEMENT	3	0	0	3

COURSE OUTCOMES

CO1	Appreciate the fundamental functions of Human Resource Management (HRM) and their significance in organizational success.
CO2	Explain the core HR functions, including hiring, training, career planning, performance management, compensation, and employee relations.
CO3	Apply HRM concepts and analytics in different business contexts to make data-driven decisions.
CO4	Analyse HR metrics and their impact on workforce planning, talent management, and performance evaluation.
CO5	Evaluate the effectiveness of HR practices by leveraging HR analytics and key performance indicators (KPIs).

UNIT 1 INTRODUCTION TO HUMAN RESOURCE MANAGEMENT 9

Introduction: Importance, Evolution, Functions, Line and staff aspects of human resource management (HRM), and HR Trends and Opportunities.

Strategic HRM: Aligning HR with Business Strategy.

Role of HR executives in a data-driven world: HR Metrics, Benchmarking, HRIS and HR Audit.

UNIT 2 HUMAN RESOURCE PLANNING, JOB ANALYSIS, RECRUITMENT AND SELECTION 10

HR Planning: Linking HR strategy to HR planning, Forecasting, Matching labour demand and supply.

Job Analysis: Basics of Job analysis, Methods for collecting job analysis information, Writing job descriptions and specifications.

Recruitment**:** Purpose, challenges, various sources and alternatives.

Selection: Screening applicants, Application Forms, Pre-employment Testing, Interviewing Applicants, Preventing Perceptual Errors, Background investigations, medical and physical exams, the employment offer.

UNIT 3 TRAINING AND DEVELOPMENT 8

Onboarding: Placement, Orientation, induction and socialization.

Training: Designing employee training and calendar, training methods, and evaluating effectiveness.

Development: Employee Development Methods, International training and development issues.

Managing Careers: The Organization's role in career development, Personality style and Career fit.

UNIT 4 PERFORMANCE MANAGEMENT 9

Performance Appraisal: Purpose, Process, Evaluating Performance with Absolute Standards and Relative Standards, Using achieved outcomes to evaluate employees, Factors that can distort appraisals.

Performance management: Creating effective performance management systems, The Performance appraisal meeting, and International performance appraisal.

UNIT 5 TOTAL REWARDS AND BENEFITS, EMPLOYEE RELATIONS 9

Establishing rewards: Rewarding employees, External factors affecting compensation, The Pay structure.

Employee benefits: Benefits planning, Legally required benefits, Voluntary benefits.

Employee relations: Workplace safety and health, understanding labor relations and collective bargaining.

TOTAL 45 HOURS

TEXTBOOKS

1. Dessler, G., & Varrkey, B. (2022). Human Resource Management, 16e. Pearson Education India.
2. Verhulst, S.L., Decenzo, D.A., and Yadav, Rama Shankar (2024). Human Resource Management, 13e. Wiley Publishers.

REFERENCES BOOKS

1. Ulrich, D. (2019). HR Transformation: Building Human Resources From the Outside In. McGraw-Hill.
2. Boudreau, J., & Ramstad, P. (2020). Beyond HR: The New Science of Human Capital. Harvard Business Review Press.
3. HBR Cases

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3205	BUSINESS ANALYTICS	3	0	0	3

LEARNING OUTCOMES

CO1	Identify trends by cleaning and describing data using summary statistics and visualization techniques.
CO2	Apply analytics techniques to develop predictive models to solve business problems.
CO3	Apply optimization techniques to recommend the best course of action based on the data analysis.

UNIT 1 INTRODUCTION TO BUSINESS ANALYTICS 10

Introduction to Analytics: Definition – Extracting value from data – Why analytics? – Components of analytics – Descriptive, Predictive and Prescriptive analytics – Big data – Structured vs Unstructured Data - Overview of Machine Learning – Types – Framework for data driven decision-making – Business analytics in practice.

UNIT 2 DATA EXPLORATION AND DESCRIPTIVE ANALYTICS 9

Business analytics process – Preprocessing and cleaning the data – Missing value – Normalizing data – Feature Engineering – Types of data – Scales of measurement – Summary statistics – Measure of central tendency –Measure of Variation – Measure of Shape – Skewness and Kurtosis – Central limit theorem - Data Visualization.

UNIT 3 PREDICTIVE ANALYTICS – SUPERVISED 9

Supervised learning techniques – Multiple linear regression – Logistic regression – Model fitting – Prediction with Regression – Decision Tree – Business application of supervised predictive analytics.

UNIT 4 PREDICTIVE ANALYTICS – UNSUPERVISED 9

Unsupervised learning techniques – Market Segmentation – Association Rules – Market-Basket Analysis – Clustering analysis – K means clustering – Hierarchical clustering – Text Mining – Business application of unsupervised predictive analytics.

UNIT 5 PRESCRIPTIVE ANALYTICS **8**

Introduction to prescriptive analytics – Prescriptive modeling – Linear Optimization — Monte Carlo Simulation – Problems roadmap for analytics capability building – AI-driven Business Transformation – Challenges in data-driven decision making and future.

TOTAL 45 HOURS

REFERENCE BOOKS

1. James R. Evans, Business Analytics: Methods, Models and Decisions, 3rd Edition, Pearson, 2021.
2. Business Analytics, Jeffrey D. Camm, James J. Cochran, Michael J. Fry, and Jeffrey W. Ohlmann, 4th Edition, Cengage learning, 2024.
3. Ramesh Sharda, Dursun Delen, Efraim Turban, and David King, Business Intelligence, Analytics and Data Science, 4th Edition, Pearson, 2019.
4. U Dinesh Kumar, Business Analytics: The Science of Data - Driven Decision Making, Wiley India, 2021.
5. Christian Albright and Wayne L. Winston, Business Analytics: Data Analysis and Decision Making, 7th Edition, Cengage learning, 2022.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3261	APPLIED OPERATIONS RESEARCH	2	0	2	3

LEARNING OUTCOMES

CO1	Demonstrate a comprehensive understanding of the core principles of operations research, mathematical modelling, and apply linear programming techniques in a business context.
CO2	Apply optimization techniques to solve transportation and assignment problems.
CO3	Analyze decision-making scenarios using game theory.
CO4	Apply decision-making tools to manage uncertainty and risk, and simulation for effective decisions.
CO5	Demonstrate the application queuing and replacement models to optimize system performance and decision-making.

UNIT 1 INTRODUCTION TO OPERATIONS RESEARCH AND LINEAR PROGRAMMING 12

Introduction to Mathematical Models – Definition – Evolution - Applications of Operations Research in decision making. Linear Programming –Formulation - Solution by Graphical and Simplex methods - Big M/ Penalty - Special Cases - Principles of Duality- Sensitivity Analysis.

UNIT 2 LINEAR PROGRAMMING EXTENSIONS 12

Transportation Models (Minimizing and Maximizing Problems) – Balanced and unbalanced Problems – Initial Basic feasible solution by N-W Corner Rule - Least cost and Vogel's approximation methods - Check for optimality by MODI method – Degeneracy – Transshipment Models. Assignment Models (Minimizing and Maximizing Problems) – Balanced and Unbalanced Problems - Hungarian and Branch and Bound Algorithms - Travelling Salesman problems - Crew Assignment Models.

UNIT 3 GAME THEORY 12

Game Theory-Two-person Zero sum games-Saddle point - Dominance Rule - Convex Linear Combination (Averages) - methods of matrices - Graphical Method.

UNIT 4 SIMULATION AND DECISION THEORY **12**

Decision making under risk – Decision trees – Decision making under uncertainty- Monte Carlo simulation.

UNIT 5 QUEUING AND REPLACEMENT MODELS **12**

Queuing Theory - Single and Multi-channel models – infinite number of customers and infinite calling source. Replacement Models-Individual replacement Models (With and without time value of money) – Group Replacement Models.

TOTAL 60 HOURS

TEXTBOOKS

1. Paneerselvam R, Operations Research, Prentice Hall of India, Fourth Print, 2008.

REFERENCE BOOKS

1. N. D Vohra, Quantitative Techniques in Management, Tata McGraw Hill, 2010.
2. G. Srinivasan, Operations Research – Principles and Applications, 2nd edition, PHI, 2011.
3. Nagraj B, Barry R and Ralph M. S Jr., Managerial Decision Modelling with Spreadsheets, Second Edition, 2007, Pearson Education.
4. Hamdy A Taha, Introduction to Operations Research, Prentice Hall India, Tenth Edition, Third Indian Reprint 2019.
5. Bernard W. Taylor III, Introduction to Management Science, 9th Edition, Pearson Ed.
6. Frederick & Mark Hillier, Introduction to Management Science – A Modeling and case studies approach with spreadsheets, Tata McGraw Hill, 2010

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3262	RESEARCH METHODOLOGY FOR BUSINESS	2	0	2	3

LEARNING OUTCOMES

CO1	Demonstrate a comprehensive understanding of business research, appreciate scientific inquiry, formulate research problems, and develop well-structured research proposals.
CO2	Design research methodologies, apply appropriate data collection methods, and implement sampling techniques for obtaining relevant research data.
CO3	Analyze and interpret research data using statistical tools, hypothesis testing, and multivariate analysis for informed decision-making.
CO4	Develop an understanding of research report types, formats, and ethical considerations in research.
CO5	Apply research methodologies, synthesize findings, and create a comprehensive research report as part of a project.

UNIT 1 INTRODUCTION **10**

Business Research – Definition and Significance – Characteristics of good research – Types of Research – Research Process – Research questions / Problems – Research objectives – Literature review – Theoretical framework – Components of Theory – Research hypotheses – Types of hypotheses – Variables in Research – Research Proposal.

UNIT 2 RESEARCH DESIGN **10**

Research Design – Definition – Types of Research Design – Exploratory and Causal research design – Descriptive and Experimental design – Different types of Experimental design – Validity of findings – Internal and External validity – Measurement and Scaling – Attitude measurement – Different scales – Scaling techniques – Validity and Reliability of instrument.

UNIT 3 DATA COLLECTION **12**

Construction of Questionnaire and Instrument – Types of Data – Primary Vs Secondary data – Classification of Primary data collection – Focus group – Depth Interview – Projective Technique - Survey Vs Observation – Classification of Secondary data — Sampling plan – Sample size – Sampling Techniques – Probability Vs Non–probability sampling methods.

UNIT 4 DATA PREPARATION & ANALYSIS **20**

Data Preparation – Editing – Coding – Data entry – Validity of data – Data Analysis – Descriptive Statistics – Univariate Analysis – Hypothesis Testing: t-Test, ANOVA, Chi-Square, Correlation & Regression – Multiple regression – Multivariate Analysis – Factor analysis – Discriminant analysis – Cluster analysis – Multidimensional scaling – Application of statistical software (SPSS, JAMOVI, JMP) for data analysis.

UNIT 5 REPORT DESIGN, WRITING AND ETHICS IN BUSINESS RESEARCH **8**

Research report – Different types - Need of Executive Summary – Chapterization – Contents of Chapter – Report Writing– Format of a research report – Pictures & Graphs – Interpretation – Oral presentation – Ethics in research – Subjectivity and Objectivity in research.

TOTAL 60 HOURS

TEXTBOOKS

1. Naval Bajpai, "Business Research Methods", 2nd Edition, 2020, Pearson Pub, New Delhi.
2. Deepak Chawl, Neena Sondhi, "Research Methodology", 2nd edition, 2018, Vikas Publishing.
3. Malhotra Naresh K, Marketing Research: Applied Orientation, 6th Edition, 2007, Pearson Pub, New Delhi.

REFERENCE BOOKS

1. Donald R. Cooper, Pamela S. Schindler and J K Sharma, Business Research methods, 11th Edition, Tata Mc Graw Hill, New Delhi, 2012.
2. R.Paneerselvam, "Research Methodology", Prentice Hall of India, New Delhi, 2010.
3. T.N. Srivastava & Shailaja Rego, "Business Research Methodology", Tata McGraw Hill.
4. William G Zikmund et al "Business Research Methods – A south-Asian perspective", 8th Edition, Cengage Learning India Pvt. Ltd., 2012.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3211	DATA INTELLIGENCE LABORATORY	0	0	2	1

LEARNING OUTCOMES

CO1	Perform data handling and preprocessing business data for analysis.
CO2	Apply descriptive analytics techniques to summarize business data.
CO3	Develop predictive analytics models for forecasting business trends.

Practical Exercise using Excel, Tableau, Python, JMP, Jamovi and/or SPSS software.

UNIT 1 DATA PREPROCESSING & DESCRIPTIVE ANALYTICS 8

Data collection & Cleaning – Handling Missing Data, Duplicates, Outliers – Exploratory Data Analysis – Descriptive Analytics – Data Visualization Techniques.

UNIT 2 PREDICTIVE ANALYTICS SUPERVISED 10

Regression Analysis – Linear – Logistic regression – Model Evaluation.

UNIT 3 PREDICTIVE ANALYTICS – UNSUPERVISED 8

Unsupervised learning techniques – Association Rules – Clustering analysis – Text Mining.

UNIT 4 PRESCRIPTIVE ANALYTICS 4

Prescriptive Analytics – Optimization Techniques.

TOTAL 30 HOURS

REFERENCE BOOKS

1. U Dinesh Kumar, Business Analytics: The Science of Data - Driven Decision Making, Wiley India, 2021.
2. Christian Albright and Wayne L. Winston, Business Analytics: Data Analysis and Decision Making, 7th Edition, Cengage learning, 2022.
3. Galit Shmueli, Peter C. Bruce, Mia L. Stephens, Muralidhara Anandamurthy, and Nitin R. Patel. Machine Learning for Business Analytics: Concepts, Techniques and Applications with JMP Pro (R), 2nd Edition. 2023.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3212	SOFT SKILLS II (Employment Enhancement Skills)	0	0	2	1

LEARNING OUTCOMES

CO1	Analyze job descriptions and organizational requirements to identify essential skills, aligning them with individual career aspirations and development plans.
CO2	Demonstrate advanced communication, analytical reasoning, and collaborative skills through structured discussions, case study evaluations, and team-based activities.
CO3	Analyze personal strengths and career interests to develop professional profiles, evaluate internship options, and select appropriate specializations.

UNIT 1 JOB DESCRIPTION AND CLIENT ANALYSIS 6

Reading and interpreting job descriptions – Understanding roles and responsibilities – Researching similar job roles across industries – Identifying key skills required – Studying client/company background and product lines – Analyzing business models and industry positioning – Understanding employer expectations from the job description.

UNIT 2 INTERPERSONAL SKILLS, GROUP DYNAMICS & CREATIVE THINKING 6

Developing communication and interpersonal skills – Participating in group discussions – Practicing role plays and simulations – Understanding group dynamics and conflict resolution – Providing and receiving constructive feedback - Tools that prepare the mind for creative thought – stimulation – Development and Actions: - Processes in creativity ICEDIP – Inspiration, Clarification, Distillation, Perspiration, Evaluation, and Incubation.

UNIT 3 CASE STUDY PREPARATION AND CRITICAL THINKING 6

Introduction to structured case study analysis – Identifying problems and analyzing alternatives – Applying data-driven decision making – Using logical and critical thinking – Structuring arguments – Presenting findings with relevance and engagement.

UNIT 4 INTERNSHIP SEARCH AND PROFILE BUILDING 6

Targeting an internship - targeting and sourcing: Ability to spot the internships matching to the interest, marketing skills to sell one's own profile. Searching for opportunities, applying, interview process and selection.

UNIT 5 CAREER PLANNING **6**

Career workshops and choosing a specialization: Learning the career choices and understanding progression in career across functional areas, mapping careers to the personality and abilities, understanding industry opportunities and choosing the right specializations, a lifelong learning map based on correct choices of career.

TOTAL 30 HOURS

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3213	BUSINESS COMMUNICATION II	0	0	2	1

LEARNING OUTCOMES

CO1	Understand and apply the techniques of effective Group communication.
CO2	Create and deliver presentations effectively.
CO3	Demonstrate techniques of delivering speeches in professional settings.
CO4	Understand the method of facing one-on-one conversations and the role of Emotional Intelligence.

UNIT 1 METHODS OF GROUP COMMUNICATION **6**

Effective participation methods in Group discussions, office meetings.

UNIT 2 ONE-ON-ONE CONVERSATIONS **6**

Personal Interviews preparation.

Elevator pitch, telephonic introductions, getting an introduction, self-introductions, giving feedback.

UNIT 3 EFFECTIVE PRESENTATIONS **6**

Principles of Effective Presentations, Presentation Do's and Don'ts, Principles governing the use of audiovisual media. Body language during presentation delivery.

UNIT 4 SPEAKING IN PROFESSIONAL SETTINGS **6**

Types of managerial speeches - Presentations and Extempore - speech of introduction, speech of thanks, occasional speech, theme speech.

UNIT 5 EMOTIONAL INTELLIGENCE IN COMMUNICATION **6**

Johari Windows – Components of E. I.

TOTAL 30 HOURS

REFERENCE BOOKS

1. Bovee, Thill &Schatzman, Business Communication Today, 13th edition, Pearson.
2. Nageshwar Rao and Rajendra Das, Business skills, HPH.
3. Lesikar, R.V. &Flatley, M.E. Basic Business Communication – Connecting in a digital world, 13thEdition, McGraw Hill Publishing Company Ltd.
4. John Seely, Oxford Guide to Effective Writing and Speaking, 3rd edition, Oxford Publishing.
5. M Ashraf Rizvi, Effective Technical Communication,.2ndEdition, TMH.
6. Meenakshi Raman and Sangeeta Sharma, Technical Communication, 3rdEdition, Oxford Publishing.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3301	BUSINESS AND CORPORATE STRATEGY	3	0	0	3

LEARNING OUTCOMES

CO1	Examine the strategic management process to understand how organizational goals align with strategic decisions.
CO2	Analyze internal and external business environments using strategic frameworks, and critically evaluate their implications for strategic decision-making.
CO3	Investigate various business-level and corporate-level strategies in relation to different business contexts.
CO4	Evaluate strategy implementation models and assess their alignment with organizational structure and culture.
CO5	Simulate strategic decision-making using business scenarios and critically evaluate the outcomes of strategic choices.

UNIT 1 INTRODUCTION **5**

Strategic Management Process -Concept of Strategy - Levels of Strategy –Stakeholders -Mission, Vision, Objectives, Goals - Business Definition -Managing Organizations by Objectives (MBO) - Strategic Business Units and Integrated Business Units, Strategic Gaps.

UNIT 2 STRATEGY FRAMEWORKS **10**

Environment Analysis Framework - PESTLE, Industry Analysis. Competency Framework -Resources, Capabilities, Core Competencies, Building Competitive Advantage. SWOT framework - Value Chain Analysis – Building blocks and industry structures.

UNIT 3 BUSINESS & CORPORATE LEVEL STRATEGIES **12**

Generic Business Level Strategies - Cost Leadership, Differentiation, Niche Strategies - Vertical Integration - Horizontal Integration - Corporate Level Strategies - Expansion, Diversification, Mergers and Acquisitions, Strategic Alliances, Networks.

UNIT 4 STRATEGY IMPLEMENTATION AND EVALUATION **8**

Strategic Fit - McKinsey 7S model, GE 9 Cell model Strategy Implementation and Evaluation - BCG Matrix, Balanced Scorecard.

UNIT 5 STRATEGYSIMULATION GAME **10**

(Overall perspective on strategy planning and implementation in an organization using simulated data).

TOTAL 45 HOURS

REFERENCE BOOKS

1. Hill, Strategic Management: An Integrated approach, 11th Edition, Cengage Learning.
2. John A. Parnell. Strategic Management, Theory and practice, 4th Edition, Sage.
3. Azhar Kazmi, Strategic Management and Business Policy, McGraw Hill.
4. Wheelen, Concepts in Strategic Management and Business Policy, Pearson.
5. John Pearce, Richard Robinson and Amitha Mittal, Strategic Management, 14th Edition, McGraw Hill India.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3216	SUMMER INTERNSHIP / RURAL COMMUNITY ENGAGEMENT	0	0	12	6

LEARNING OUTCOMES

CO1	Apply managerial concepts and functional knowledge to real-world business or rural development settings through hands-on engagement.
CO2	Analyze and examine day-to-day business processes in an organizational setting to understand the structure, operations, and interdepartmental linkages, with the aim of learning functional integration.
CO3	Apply professional management practices including effective communication, teamwork, and time management, while building industry connections and networks to guide future career choices.

About the course

This course provides MBA students with the opportunity to undertake a structured internship during the summer term following their first year. Students can choose **either** of the following pathways based on their interest and career aspirations:

- **Summer Internship**:

  A corporate internship within an organization where students apply management concepts to real-world business challenges. The internship allows them to work in functional domains such as Marketing, Finance, HR, Operations, or Analytics. It helps develop industry exposure, professional skills, and decision-making capabilities by engaging in problem-solving within a business context.

- **Rural Engagement Internship**:

  An immersive, hands-on experience in rural ecosystems aimed at understanding and contributing to socio-economic development. Students collaborate with NGOs or community-based organizations to engage with rural populations, study their lifestyles, institutions, and challenges, and co-develop context-sensitive solutions. This field immersion fosters empathy, community participation, and the application of design thinking and inclusive development principles.

GUIDELINES

Students should do the project individually. A project coordinator nominated by the Head of the department will initiate the identification and allotment of the project and coordination of the review process.

Project coordinator:

The project coordinator will coordinate the following

1. Equal distribution of projects to each supervisor.
2. Project evaluation by review panel at regular intervals (minimum of three reviews).
3. Ensuring that the project report is according to the prescribed format.
4. Monitoring the attendance of the students.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3401	BUSINESS ETHICS AND CORPORATE GOVERNANCE	3	0	0	3

LEARNING OUTCOMES

CO1	Understand ethical concepts that are relevant to moral issues in business.
CO2	Identify ethical issues in business decisions and how companies have addressed them.
CO3	Understanding of issues that arise from social, technological and natural environments of businesses
CO4	Understand the concept of moral dilemmas in business and ways by which companies have addressed these.
CO5	Understand the role of corporate governance in businesses and its mechanism of implementation.

UNIT 1 **9**

Principles, Types, Characteristics of Ethics, Sources of Business Ethics, Importance of Business Ethics, Ethical theories- Normative and Descriptive, Ethical principles in Business.

UNIT 2 **9**

Ethical issues, Unethical behavior-causes, Ethical abuses, Discrimination, Harassment, Workplace ethics, Organizational characteristics and ethical challenges, Characteristics of Work Ethics, Code of Conduct, Code of Ethics, Managing ethics in organizations.

UNIT 3 **9**

Business issues, Ethics of the environment, social, legal, technological and political issues, prevention of pollution and depletion of natural resources, Conservation.

UNIT 4 **9**

Ethical dilemma, Role of Government, trade, Ethics of market structures, International trade in the business systems, Ethics of Competition in Business.

UNIT 5 **9**

Need for corporate governance, corporate governance code, transparency and disclosure, role of auditors, board of directors and shareholders, global issues in governance, accounting and regulatory framework, corporate scams, corporate social responsibility.

TOTAL 45 HOURS

REFERENCE BOOKS

1. Business Ethics, Concepts and Cases, Seventh Edition, Manuel G Velasquez, PHI.
2. Corporate Governance, Third Edition, Bob Tricker, Oxford
3. Corporate Governance: Principles and Practices, Sandeep Goel, McGraw Hill.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3414	INNOVATION AND NEW PRODUCT DEVELOPMENT	0	0	4	2

LEARNING OUTCOMES

CO1	Apply the fundamental concepts of innovation, types of innovation, and the structured process to take innovations from idea to market.
CO2	Apply and analyse tools and frameworks to identify customer needs, develop value propositions, test hypotheses, and build prototypes.
CO3	Design sustainable business models and understand the process of innovation delivery from Minimum Viable Product (MVP) to commercialization.

UNIT 1 INTRODUCTION TO INNOVATION – CONCEPTS, TYPES AND STAGES 15

Definition and Importance of Innovation – Types of Innovation (10 Types Framework by Doblin) – Innovation in Products, Processes, Business Models, and Customer Experience – Incremental vs. Disruptive Innovation – Innovation Case Studies across Industries – Overview of the 9-Stage Innovation Process (Discovery to Commercialization) – Desirability, Feasibility, Viability Framework.

UNIT 2 CUSTOMER DISCOVERY & UNDERSTANDING VALUE 10

Jobs-to-be-Done Framework (JTBD) – Customer Interviews and Ethnographic Research – Pains, Gains, and Needs Mapping – Problem Statement Validation – Tools: Empathy Maps, Customer Personas.

UNIT 3 HYPOTHESIS FRAMING, TESTING, PROTOTYPING METHODS AND RAPID TESTING 15

Assumption Mapping (Desirability, Feasibility, Viability) – Designing Hypothesis Tests – Minimum Viable Tests (MVTs) – Data Collection and Analysis for Hypothesis Validation – Types of Prototypes (Paper Prototypes, Digital Mockups, Service Blueprints) – Low-Fidelity vs. High-Fidelity Prototyping – User Testing and Feedback Loops – Iteration Cycles and Agile Prototyping.

UNIT 4 BUSINESS MODEL DESIGN AND VALIDATION **10**

Business Model Canvas Overview – Value Proposition to Revenue Model Linkage – Channels, Partners, and Key Resources – Cost Structure and Pricing Approaches – Testing the Business Model - Lean Startup Approach.

UNIT 5 DELIVERING INNOVATION AND NEW PRODUCT DEVELOPMENT **10**

Taking ideas from prototype to Minimum Viable Product (MVP) – Key steps in launching new products – Scaling and commercialization challenges – Applying lean startup and agile methods for faster delivery – Metrics to track product success – Securing funding and organizational support for new innovations.

TOTAL 60 HOURS

TEXTBOOKS

1. Osterwalder & Pigneur, Value Proposition Design, Wiley, 2014
2. Eric Ries, The Lean Startup, Crown Business, 2011
3. Clayton Christensen, The Innovator's Dilemma, Harvard Business Review Press, 2016

REFERENCES BOOKS

1. Tim Brown, Change by Design, Harper Business, 2009
2. Steve Blank, The Startup Owner's Manual, K&S Ranch, 2012
3. David Bland & Alex Osterwalder, Testing Business Ideas, Wiley, 2020

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3418	FINAL SEMESTER PROJECT	0	0	24	12

CO1	Develop research skills by identifying a research problem.
CO2	Conduct a comprehensive literature review to establish a strong theoretical foundation.
CO3	Learn the intricacies of designing and implementing a research project
CO4	Hone the ability to articulate research findings clearly and concisely, both in written reports and through presentations.

About the Project:

In response to the evolving demands of higher education, our final semester projects are designed witha strong research orientation. Students engage in real-world issues in external organizations or internal projects identified by faculty. Each student collaborates with a dedicated faculty member who guides them through the process. For projects in external organizations, a designated guide ensures alignment with organizational goals. This dual mentorship model enhances practical learning, equipping students with hands-on experience and problem-solving skills. By combining academic rigor with real-world application, our approach transforms the final semester project into a pivotal educational experience, preparing students for the dynamic challenges of their future professions.

Milestones:

- Determining the project's nature: External or internal.
- Submitting the confirmation letter:
    - If it is an **external project**, the submission of company's confirmation letter on official letterhead or via email from the company's authorized address, includingthe guide's name, contact number, and official email details.
    - If it is an **internal project**, the submission of the confirmation letter can be done onSSN letterhead or via email from the assigned faculty.
- **MBA Project 0 Review: (Research Problem):** Identify a research problem statement in consultation with the faculty guide assigned and seek approval from the panel.

- **MBA Project Review 1: (Review of literature):** Conduct a literature review on the identified problem statement, refine it as necessary, and clearly articulate the existing gaps.

- **MBA Project Review 2: (Research design):** Provide a proposal outlining the various methods you plan to adopt for your study, including sampling, data collection (standard scales that are under consideration), and analysis. Justify why each method is well-suited for the study.

- **MBA Project Review 3: (Data analysis and presentation):** Present the data analysis conducted on the collected data, along with its interpretation, inferences, limitations, and future scope of the study.

- Submitting the completion letter:
    - If it is an **external project**, the submission of company's completion letter on official letterhead or via email from the company's authorized address, includingthe guide's name, contact number, and official email details.
    - If it is an **internal project**, the submission of the completion letter can be done onSSN letterhead or via email from the assigned faculty.

- **MBA Project Report Submission:** This must adhere to SSN guidelines and format. The expectations will be uploaded in the LMS. A soft copy of the same should be submitted to the faculty guide, and it may be printed after approval from the guide.

Expectations from the students:

- Regularly checking the Learning Management System (LMS) and college emails, andpromptly completing any required actions as directed by the facilitators.

- Staying in regular communication with the assigned faculty guide, addressing andincorporating the review comments provided.

- Maintain 100% attendance in all four reviews, present progress to the panel, and promptly addressany corrections provided by panel members.

- Ensuring there is no form of plagiarism.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3214	BUSINESS ANALYSIS AND PROCESS MANAGEMENT	1	0	2	2

LEARNING OUTCOMES

CO1	Demonstrate an understanding of the role of a business analyst and the competencies required.
CO2	Ability to investigate a business situation and ability to handle various stakeholders.
CO3	Gaining a system-based understanding of business rules, the associated key performance indicators and their influence to analyse the business processes.
CO4	Ability to document a business process, analyse and identify the areas for improvements by conducting gap analysis.
CO5	Establish requirements and ability to deliver a feasible business solution with benefits.

UNIT 1 BUSINESS ANALYSIS INTRODUCTION 9

Business Analysis - scope, role and responsibilities of business analyst and maturity model. Competencies of business analyst - Behavioural and personal skills, business knowledge, techniques, right competencies and prevailing industry skills framework. Business Ecosystem. Business Systems. Context of strategy in business analysis framework.

UNIT 2 BUSINESS ANALYSIS SERVICES FRAMEWORK 9

Understanding the core business of a client. Industry 4.0 to do the gap analysis. Process model, Value Chains, service framework, investigation techniques, stakeholder analysis and management strategies. Perspective Analysis. Diagrammatic recording of Business situations. Internal and external environmental analysis using VMOST, BSC, PESTLE, etc.

UNIT 3 BUSINESS MODELLING 9

Modelling business systems - business perspectives, activity models, SIPOC, business rules, critical success factors and key performance indicators, validation of activity models and using the activity model to perform gap analysis. Modelling business processes - organizational view with business processes, arriving at the business process model, analyzing the business process model, improving the business processes using UML diagrams.

UNIT 4 REQUIREMENTS MANAGEMENT **9**

Requirements - gathering, documenting, modelling and delivering. Requirement Life Cycle management. Prioritization of requirements. Requirements Engineering Framework and actors. BRD. Requirements Traceability Matrix.

UNIT 5 MAKING A BUSINESS AND FINANCIAL CASE **9**

Business case in the project life cycle, CARDI, project feasibility, structure of business case, investment appraisal for business case, presentation of business case with benefits and realizations.

TOTAL 45 HOURS

TEXTBOOKS

1. Business Analysis - Debra Paul, James Cadle and others- BCS Learning and Development, 4th edition, 2020.

REFERENCE BOOKS

1. A Guide to the Business Analysis Body of Knowledge – (IIBA BABOK) International Institute of Business Analysis – Business Analysis Body of Knowledge.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3215	ENTREPRENEURSHIP DEVELOPMENT	1	0	2	2

LEARNING OUTCOMES

CO1	Identify customer problems and validate needs using the Jobs-To-Be-Done (JTBD) framework and customer personas.
CO2	Develop and assess innovative ideas through structured ideation and market opportunity analysis.
CO3	Design minimum viable products (MVPs) and evaluate market potential and positioning.
CO4	Formulate business models and implement effective go-to-market strategies.
CO5	Plan financials, build founding teams, and prepare compelling investor pitches.

UNIT 1 PROBLEM IDENTIFICATION AND CUSTOMER VALIDATION 9

Macro Industry Trends & Real-World Problems - Identifying Customer Segments & Needs Validation Jobs-To-Be-Done (JTBD) Framework - Creating and Validating Customer Persona - Pivoting/Refining for Problem-Solution Fit.

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UNIT 2 IDEA GENERATION AND OPPORTUNITY MAPPING 9

Idea Generation Techniques & Ideation Frameworks - Competitor Analysis: Understanding Global Players Market Opportunity Mapping - TAM, SAM, SOM.

UNIT 3 PROTOTYPE DEVELOPMENT AND OPPORTUNITY ASSESSMENT 9

Prototype and MVP Development for Early Validation - Opportunity Assessment: Relative Market Position and Opportunity Sizing.

UNIT 4 BUSINESS MODELLING AND MARKET STRATEGY 9

Revenue Models and Lean Canvas - Go-to-Market (GTM) Strategy and Sales Processes.

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UNIT 5 FINANCIALS, TALENT & PITCH READINESS 9

Startup Costs, Financial Planning and Bootstrapping - Fundraising Options and Investor Readiness - Team Formation: Co-founders, Mentors and Initial Team Pitch Preparation for Venture Idea.

TOTAL 45 HOURS

TEXTBOOKS

1. S. S. Khanka, Entrepreneurial Development, S. Chand and Company Limited, New Delhi, 2016.

REFERENCE BOOKS

1. R. D. Hisrich, Entrepreneurship, Tata McGraw Hill, New Delhi, 2018.
2. Rajeev Roy, Entrepreneurship, Oxford University Press, 2nd Edition, 2011.
3. Donald F Kuratko, T.V Rao. Entrepreneurship: A South Asian perspective. Cengage Learning, 2012.
4. Dr. Vasant Desai, "Small Scale Industries and Entrepreneurship", HPH, 2006.
5. Arya Kumar. Entrepreneurship, Pearson, 2012.
6. Prasanna Chandra, Projects – Planning, Analysis, Selection, Implementation and Reviews, Tata McGraw-Hill, 8th edition, 2017.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3219	SUSTAINABLE DEVELOPMENT AND ESG	1	0	2	2

LEARNING OUTCOMES

CO1	Understand the recent developments in climate and sustainability with focus on global policy, technological changes, ESG metrics and national roadmap.
CO2	Analyze the key factors contributing to climate change, impact on business, financial instruments, measuring/reporting and management through organization-wide sustainability measures.
CO3	Apply the knowledge to estimate energy consumption, carbon footprint, mitigation and monetize through carbon markets.

UNIT 1 SUSTAINABILITY FOR BUSINESS 9

Basics of Sustainability - Triple Bottom Line - Sustainable Business Models – Role of Global and Regional Sustainable Development Institutions- Role of SDGs – Business Contribution to SDGs- Article 6 of the Paris Agreement.

UNIT 2 MANAGEMENT OF SUSTAINABLE ECOSYSTEMS 9

Significance of Natural Resources – Key International Conventions and National Laws – Sustainable Consumer Lifestyles - Green Supply Chain Management - Carbon sequestration and climate mitigation - Ecosystem Based Interventions.

UNIT 3 SUSTAINABLE SOCIO-ECONOMIC FIRM PERFORMANCE 9

ESG Concept – Sustainability Reporting – Theories and Frameworks – Carbon Market Introduction - Key Stakeholders in Indian and Global Carbon Markets- Green Washing – Sustainable Projects – Investment, Risks and Benefits- Intersection of carbon markets and renewable energy.

UNIT 4 GLOBAL CARBON MARKET 9

International carbon market mechanisms - Carbon Border Adjustment Mechanism (CBAM) - Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) - Price transparency in carbon markets- Digitize Over the Counter (OTC) transactions.

UNIT 5 CARBON PROJECTS AND CLIMATE FINANCE 9

Climate Finance Policies - Financial instruments like Green Bonds, Climate Funds - Impact investing, venture capital, concessional finance for scaling up clean technologies – Case Study from Carbon Registry.

TOTAL 45 HOURS

TEXTBOOKS

1. Redclift, M., & Springett, D. (2015). Routledge International Handbook of Sustainable. Development (1st ed.). New York: Taylor & Francis Group.
2. Robert Brinkmann, Vaibhav Bhamoriya (2022), Introduction to Sustainability, 2ed.

REFERENCE BOOKS

1. Chief Sustainability Officers At Work: How CSOs Build Successful Sustainability and ESG. Strategies - Chrissa Pagitsas..
2. Sustainability Reporting: Getting Started - Gwendolen B. White.
3. The Sustainability Edge – Suhas Apte & Jagdish N. Sheth.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3321	ADVERTISING AND DIGITAL MARKETING	3	0	0	3

LEARNING OUTCOMES

CO1	Analyze the strategic role and impact of advertising in marketing, brand building, and sales promotion.
CO2	Evaluate print, broadcast, and outdoor advertising types, trends, and design principles, and integrate public relations to enhance campaign effectiveness.
CO3	Analyze digital marketing concepts, evaluate website development principles, and implement PPC advertising strategies and optimization.
CO4	Develop and manage effective social media profiles, create and curate content, implement social media and email marketing strategies, and utilize tools for scheduling and analytics.
CO5	Set SMART marketing goals, identify and track relevant KPIs, analyze campaign performance and ROI, and apply attribution models and optimization techniques.

UNIT 1 INTRODUCTION TO ADVERTISING **9**

Definition and Objectives of Advertising - Functions of Advertising in Marketing - Role of Advertising in Brand building and Sales Promotion - Milestones in the history of Advertising – Evolution of Advertising Mediums from print to digital - Impact of Technological Advancements in Advertising Practices. Advertising Theories and Models - AIDA Model - Hierarchy of Effects Model - Elaboration Likelihood Model (ELM) - Advertising Agencies and Ethics - Ethical considerations in Advertising: truthfulness, transparency, social responsibility.

UNIT 2 ADVERTISING CHANNELS **9**

Print Advertising - Types of print media (newspapers, magazines, direct mail) - Design principles for print ads - Print advertising trends and challenges Broadcast Advertising - Television Advertising - Types of Ads, Scheduling, Costs - Radio Advertising: advantages, formats, audience targeting - Trends in broadcast advertising (OTT platforms, podcast advertising) Outdoor Advertising and PR – Outdoor Advertising Mediums (billboards, transit ads, street furniture) - Role of Public Relations (PR) in Advertising - Creating synergy between PR and advertising campaigns.

UNIT 3 DIGITAL MARKETING FUNDAMENTALS **9**

Definition and Scope of Digital Marketing - Advantages of Digital Marketing over Traditional Advertising - Digital Marketing Trends and Statistics - Website Development and Optimization – Importance, Website design principles and user experience (UX) considerations and Search Engine Optimization (SEO) basics for website optimization. Pay-Per-Click (PPC) Advertising - Introduction to PPC Advertising Platforms (Google Ads, Bing Ads) - Creating PPC Campaigns: Keyword Research, Ad copywriting, Bidding strategies - PPC campaign optimization and performance measurement.

UNIT 4 SOCIAL MEDIA MARKETING **9**

Overview - Social Media Platforms (Facebook, Instagram, Twitter, LinkedIn, etc.) -Understanding user demographics and behavior on Social Media - Social Media Usage Trends and Statistics - Creating and Managing Social Media Profiles - Setting up business profiles on social media platforms - Content planning and calendar creation for social media -Tools and techniques for social media management (scheduling, analytics). Content Creation and Curation for Social Media - Social Media Advertising Strategies - Influencer Marketing - Content Marketing Principles and Strategies - Email Marketing Fundamentals - Designing Email Campaigns and Marketing Automation.

UNIT 5 DIGITAL ANALYTICS AND PERFORMANCE MEASUREMENT **9**

Key Performance Indicators (KPIs) for Digital Marketing - Setting SMART marketing goals -Identifying relevant KPIs for Advertising and Digital Marketing Campaigns - Tools and Techniques for tracking and reporting KPIs. Analyzing Campaign Performance and ROI - ROI calculation for Advertising and Digital marketing campaigns - Attribution Models: first-click, last-click, multi-touch attribution - Analyzing Conversion Funnels and Optimizing Campaign Performance - A/B Testing and Optimization Techniques.

TOTAL 45 HOURS

REFERENCE BOOKS

1. George E Blech, Michael A Belch and Keyoor Purani, Advertising and Promotion: An Integrated Marketing Communications Perspective, McGraw Hill. 2021.
2. Seema Gupta, Digital Marketing 3rd Edition, McGraw Hill. 2022.
3. Dave Chaffey and Fiona Ellis-Chadwick, Digital Marketing, 8th Edition, Pearson. 2022.
4. Trace L. Tuten, Michael R. Solomon and Bikramjit Rishi, Social Media Marketing, Sage, 2023.
5. William D. Wells, Sandra Moriarty and Nancy Mitchell, Advertising & IMC: Principles and Practice, 11th Edition, Pearson, 2021.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3322	B2B TECHNOLOGY SALES MANAGEMENT	3	0	0	3

LEARNING OUTCOMES

CO1	Understand the fundamentals of B2B technology sales and its unique characteristics.
CO2	Learn key sales strategies, including lead generation, prospecting, and closing deals.
CO3	Develop skills in consultative selling, relationship management, and negotiation.
CO4	Explore the role of digital tools, CRM systems, and sales analytics.
CO5	Gain insights into handling objections, post-sales support, and customer retention.

UNIT 1 INTRODUCTION TO B2B TECH SALES **9**

Overview of B2B vs. B2C Sales - Characteristics of B2B Technology Sales - Buyer Decision- Making Process in Tech Sales - Miller Heiman Sales Process Model - Understanding Customer Needs and Pain Points - Role of a B2B Tech Sales Professional.

UNIT 2 SALES STRATEGIES & LEAD GENERATION **9**

Sales Funnel & Sales Cycle in B2B Tech Sales - Lead Generation Techniques (Inbound vs. Outbound) - Qualifying Leads: BANT & CHAMP Frameworks - Prospecting Methods (Cold Calling, Email Outreach, Social Selling) - Importance of Market Segmentation & Targeting.

UNIT 3 CONSULTATIVE SELLING & RELATIONSHIP MANAGEMENT **9**

The Challenger Sales Model & SPIN Selling - Building Trust & Long-Term Relationships with Clients - Conducting Effective Sales Presentations & Demos - Handling Objections & Overcoming Customer Concerns - Negotiation Techniques for Tech Sales.

UNIT 4 SALES TOOLS, CRM & ANALYTICS **9**

Introduction to CRM Tools (Salesforce, HubSpot, Zoho, etc.) - Using Data Analytics for Sales Performance Tracking - Role of AI & Automation in Sales - Forecasting & Pipeline Management - Sales Enablement & Content Strategy.

UNIT 5 CLOSING DEALS & POST-SALES SUPPORT **9**

Closing Strategies in B2B Tech Sales - Contract Management & Legal Considerations - Customer Onboarding & Training - Account Management & Customer Success Strategies - Retention, Upselling & Cross-Selling Opportunities.

TOTAL 45 HOURS

TEXTBOOKS

1. Jill Konrath, Selling to Big Companies, First Edition, 2005, Kaplan Publishing.

REFERENCE BOOKS

1. Jacco van der Kooij & Fernando Pizarro the SaaS Sales Method: Sales as a Science, First Edition, 2018, CreateSpace Independent Publishing Platform.
2. Aaron Ross & Jason Lemkin from Impossible to Inevitable: How SaaS and Other Hyper-Growth Companies Create Predictable Revenue**,** First Edition, 2016, Wiley.
3. Justin Michael & Tony Hughes, Tech-Powered Sales: Achieve Superhuman Sales Skills, First Edition, 2021, HarperCollins Leadership.
4. Trish Bertuzzi, The Sales Development Playbook: Build Repeatable Pipeline and Accelerate Growth with Inside Sales**,** First Edition, 2016, The Bridge Group.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3323	BRAND MANAGEMENT	3	0	0	3

LEARNING OUTCOMES

CO1	Apply the key branding concepts to build strong brands.
CO2	Develop marketing communication programs by applying branding principles.
CO3	Evaluate brand performance through qualitative and quantitative analysis and propose strategic recommendations based on the results.
CO4	Apply branding strategies to introduce new brands and manage brands over time.

UNIT 1 INTRODUCTION TO BRAND EQUITY 9

Define Brand – Brand vs. Product – Functions of Brand – Branding Challenges and Opportunities – Brand Equity Concept – Customer Based Brand Equity – Sources of Brand Equity – Strategic Brand Management Process.

UNIT 2 BUILDING STRONG BRAND 9

Identifying and Establishing Brand Positioning – Brand Mantra – Building Strong Brands – Brand Building Blocks – Brand Anatomy-Aaker model of Brand Equity-Brand Resonance Model – Brand Value Chain.

UNIT 3 PLANNING AND IMPLEMENTING MARKETING PROGRAMS 9

Brand Elements– Integrated Marketing Communication –Advertising and Promotions – Online Marketing – Events and Experiences – Mobile Marketing – Public Relations and Publicity – Brand Leverage – Secondary Sources of Brand Knowledge –
Co-Branding – Celebrity Endorsement.

UNIT 4 MEASURING BRAND EQUITY 9

Measuring Sources of Brand Equity – Research Methods and Techniques – Conducting Brand Audits – Measuring Outcome of Brand Equity (Brand Performance).

UNIT 5 GROWING AND SUSTAINING BRAND EQUITY 9

Brand Architecture – Brand Portfolios – Brand Hierarchies – Brand Extension – Brand Reinforcement – Brand Revitalization – Building Global Brands.

TOTAL 45 HOURS

REFERENCE BOOKS

1. Kevin L. Keller, Vanith Swaminathan, Ambi M. G. Parameswaran and Isaac Jacob, Strategic Brand Management: Building, Measuring and Managing Brand Equity, 5th Edition, Pearson, 2020.
2. Al Ries and Jack Traut, Positioning: The Battle for your Mind, 1st Edition, McGraw-Hill, 2017.
3. Alice M. Tybout and Tim Calkins, Kellogg on Branding in a Hyper-connected World, Wiley, 2019.
4. David A. Aaker, Building Strong Brands, Simon & Schuster, 2010.
5. Kiriti Dutta, Brand Management, 2nd Edition, Oxford, 2022.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3324	CONSUMER BEHAVIOUR AND ANALYTICS	3	0	0	3

LEARNING OUTCOMES

CO1	Demonstrate understanding of foundational concepts in consumer behaviour and the significance of analytics in contemporary marketing contexts.
CO2	Analyze consumer purchasing patterns and transaction dynamics to interpret behaviour and decision-making at various touchpoints.
CO3	Evaluate online consumer behaviour through web and social media analytics to derive actionable marketing insights.
CO4	Assess psychological and cognitive processes, including biases and heuristics, that influence consumer decision-making.
CO5	Apply advanced consumer analytics models and knowledge-driven strategies to predict behaviour and inform marketing practices.

UNIT 1 INTRODUCTION TO CONSUMER BEHAVIOUR AND ANALYTICS 9

Definition and scope of consumer behaviour - Importance of consumer analytics in marketing - Traditional vs. digital consumer behaviour - Consumer decision-making models - The role of psychology, economics, and social sciences in consumer behaviour.

UNIT 2 PURCHASE INSIGHT AND THE ANATOMY OF TRANSACTIONS 9

Understanding consumer purchase decisions - The anatomy of a transaction: factors influencing purchase behaviour - Buying patterns, loyalty, and switching behaviour - Customer journey mapping and touchpoints - Case studies on consumer transactions and purchase insights.

UNIT 3 WEB AND SOCIAL ACTIVITY IN CONSUMER ANALYTICS 9

Online consumer behaviour and digital footprints - Social media influence on consumer decisions - Sentiment analysis and consumer engagement metrics - Personalization and targeted marketing strategies
- Ethical considerations in web and social analytics.

UNIT 4 DECISION-MAKING AND COGNITIVE PROCESSES IN CONSUMER BEHAVIOU 9

Extant research on consumer decision-making - Exogenous cognition and external influences on consumer choices - Heuristics, biases, and risk perception in buying decisions - Elemental features of consumer choice: needs, economics, deliberation, and impulse - Perceptual and communicative aspects of consumer decision-making.

UNIT 5 ADVANCED CONSUMER ANALYTICS AND MARKETING APPLICATIONS 9

Individual vs. social features of consumption - Data-driven insights for marketing strategies - Knowledge-driven marketing approaches - Introduction to the Modular Adaptive Dynamic Schematic (MADS) - Future trends in consumer behaviour and predictive analytics.

TOTAL 45 HOURS

TEXTBOOKS

1. Andrew Smith, Consumer Behaviour and Analytics, Second Edition, 2023, Routledge.

REFERENCE BOOKS

1. Solomon, M. R. (2020). Consumer Behavior: Buying, Having, and Being (13th Edition). Pearson.
2. Kotler, P., Kartajaya, H., & Setiawan, I. (2021). Marketing 5.0: Technology for Humanity. Wiley.
3. Kahneman, D. (2011). Thinking, Fast and Slow. Farrar, Straus and Giroux.
4. Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2021). A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM) (3rd Edition). Sage Publications.
5. Wedel, M., & Kamakura, W. A. (2000). Market Segmentation: Conceptual and Methodological Foundations. Springer.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3325	DIGITAL CUSTOMER RELATIONSHIP MANAGEMENT	3	0	0	3

LEARNING OUTCOMES

CO1	Apply the concept of CRM to enhance the marketing, sales, and service objectives of the organization.
CO2	Design CRM strategies to acquire, retail and develop customers.
CO3	Apply best customer data management practices to improve customer relationships.
CO4	Implement the key CRM components required at each stage of the customer lifecycle.

UNIT 1 INTRODUCTION TO CRM **8**

CRM – Definition- Historical Perspective – Basic terminology and Key Concepts –Significance of CRM in modern marketing.

UNIT 2 CRM COMPONENTS **10**

Customer Databases and Profiles – Marketing Automation – Exploring Media Channels for CRM - Analytics and Reporting – Defining Objectives & KPIs – CRM Implementation – Challenges and Best Practices.

UNIT 3 CUSTOMER DATA MANAGEMENT **10**

Data Collection – Data Validation and Cleansing – Data Enrichment - Data Privacy and Compliance – CRM's Role in Data Management.

UNIT 4 CUSTOMER SEGMENTATION AND TARGETING **10**

Importance of Segmentation – Data-Driven Segmentation – Personalization and Targeting - Customer Journey Mapping - Case Studies.

UNIT 5 CRM FOR E-COMMERCE & FUTURE TRENDS **7**

CRM for Ecommerce – Hyper-personalization in CRM – Future Trends with AI, Blockchain and IoT.

TOTAL 45 HOURS

REFERENCE BOOKS

1. Daniel D. Prior, Francis Buttle and Stan Maklan (2024), Customer Relationship Management: Concepts, Applications and Technologies, 5th edition, Routledge.
2. Peelen Ed. (2022). Customer Relationship Management: Concepts, Pearson Education.
3. Kumar V. and Werner Reinartz (2018). Customer Relationship Management: Concept, Strategy, and Tools, Springer.
4. Naresh K Malhotra and James Agarwal, Customer Relationship Marketing: Theoretical and Managerial Perspectives, World Scientific Publishing, 2021.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3326	INTERNATIONAL MARKETING	3	0	0	3

LEARNING OUTCOMES

CO1	Evaluate the impact of cultural, economic, political, and legal environments on international business operations and decision-making.
CO2	Conduct country analysis and develop international market entry strategies.
CO3	Analyze and apply the elements of the marketing mix in an international context to develop effective global marketing strategies.
CO4	Demonstrate an understanding of the key procedures, and documentation required for exporting products from India.

UNIT 1 INTRODUCTION TO INTERNATIONAL MARKETING 9

International Marketing, Opportunities and Challenges – Importance of Global Marketing – Trade Barriers – Institutions in International Trade – Forms of Regional Economic Integration.

UNIT 2 INTERNATIONAL MARKETING ENVIRONMENT 9

Global Marketing Research – Political and Economic Environment – Socio-cultural Environment – Legal Environment.

UNIT 3 INTERNATIONAL MARKET ENTRY STRATEGIES 9

Types of markets – Strategic Planning –Analyzing people and markets – International Market Selection – Country Attractiveness – Segmenting and Positioning Global Market – Market Entry Strategies.

UNIT 4 INTERNATIONAL MARKETING MIX 9

Product and Brand Management – Marketing of Services – Advertising, Promotion and Sales – Pricing Strategies – Distribution and Logistics.

UNIT 5 IMPLEMENTING GLOBAL MARKETING STRATEGIES 9

Cross-cultural Sales Negotiations – Organization and Control of the Global Marketing Programme – Institutional Infrastructure for Export Promotion – Export Procedures, Steps in Processing an Export Order – Export Documentation – Modes of Payment – International Trade Finance – Managing Risks in International Trade.

TOTAL 45 HOURS

REFERENCE BOOKS

1. Philip Cateora, Bruce Money, Mary Gilly and John Graham, International Marketing, 19th Edition, McGraw Hill, 2024.
2. Svend Hollensen, Global Marketing, 8th Edition, Pearson, 2020.
3. Keegan Warren and Green Mark, Global Marketing, 9th Edition, Pearson, 2018.
4. Rahtor B.S., Rathor J.S., Sahera Fatima and Apeksha Gupta, Export Marketing, Himalaya publishing House, 2024.
5. Masaaki Kotabe, Kristiaan Helsen and Prateek Maheshwari, 8th Edition, Wiley, 2021.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3327	SERVICES MARKETING	3	0	0	3

LEARNING OUTCOMES

CO1	Explain the unique characteristics of services and apply segmentation, targeting, and positioning strategies in competitive service markets.
CO2	Develop service marketing strategies by adapting product, price, place, and promotion elements to service contexts.
CO3	Design and evaluate service processes and environments to optimize customer experience and operational efficiency.
CO4	Apply relationship-building strategies and service recovery mechanisms to enhance customer loyalty and satisfaction.
CO5	Assess and implement service quality improvement models such as TQM, Six Sigma, and ISO standards for achieving service excellence.

UNIT 1 UNDERSTANDING SERVICE PRODUCTS, CUSTOMERS AND MARKETS 9

Customer Value in the Service Economy – What are Services? – The 7Ps of Services marketing – Services Challenges – The Three-Stage Model of Service Consumption – Prepurchase Stage – Service Encounter Stage – Post-Encounter Stage – Positioning Services in Competitive Markets – Customer, Competitor and Company Analysis – Segmentation, Targeting and Positioning Services.

UNIT 2 APPLYING THE 4 P'S OF MARKETING TO SERVICES 9

Developing Service Products and Brands – Flower of Service – Branding Strategies for Services – Distributing Services through Physical and Electronic Channels – Strategic Location Considerations – The Role of Intermediaries – Franchising – Service Pricing and Revenue Management – Service Marketing Communications – Services Marketing Communications Mix.

UNIT 3 MANAGING THE CUSTOMER INTERFACE 9

Designing Services Processes – Developing Service Blueprint – Customer Participation in Service Processes – Self-Service Technologies – Balancing Demand and Capacity – Managing Capacity – Managing Demand – Customer Perceptions of Waiting Time – Crafting Service the Environment – The Servicescape Model – Dimensions of Service Environment – Managing People for Service Advantage – Cycle of Failure, Mediocrity and Success – Human Resource Management – Service Culture, Climate and Leadership.

UNIT 4 DEVELOPING CUSTOMER RELATIONSHIPS 9

Managing Relationships and Building Loyalty – The Wheel of Loyalty – Strategies for Reducing Customer Defections – CRM: Customer Relationship Management – Complaint Handling and Service Recovery – Customer Complaining Behaviour – Customer Responses to Effective Service Recovery – Service Guarantees – Discouraging abuse and opportunistic customer behaviour.

UNIT 5 STRIVING FOR SERVICE EXCELLENCE 9

Improving Service Quality and Productivity – What is Service Quality? Measuring Service Quality – Integration and Systemic Approaches to Improving Service Quality and Productivity – Total Quality Management – ISO 9000 Certification – Six Sigma – Malcolm-Baldrige and EFQM Approaches – Case Studies.

TOTAL 45 HOURS

TEXTBOOK

1. Christopher Lovelock, Jochen Wirtz and Jayanta Chatterjee, Services Marketing People, Technology, Strategy, 8th Edition, Pearson.

REFERENCE BOOKS

1. Hoffman, Marketing of Services,4th Edition, Cengage,2010.
2. Kenneth et al, Services Marketing Operations Management and Strategy, 2nd Edition, Biztantra, New Delhi, 2004
3. Valarie Zeithamletal, Services Marketing,5th International Edition, Tata McGraw Hill, 2007.
4. Gronroos, Service Management and Marketing, 3rd Edition Wiley India, 2009.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3328	MARKETING RESEARCH	3	0	0	3

LEARNING OUTCOMES

CO1	Explain key concepts, types, and the significance of marketing research in business decision-making.
CO2	Design appropriate research methodologies including sampling, questionnaire development, and research design.
CO3	Collect and evaluate data using suitable measurement and scaling techniques ensuring validity and reliability.
CO4	Analyze data using statistical techniques such as regression, factor analysis, and hypothesis testing to derive insights.
CO5	Present research findings effectively through well-structured reports and ethical communication of insights.

UNIT 1 INTRODUCTION AND EARLY PHASES OF MARKETING RESEARCH 8

Importance and Role of research in Marketing - Marketing research industry - Types of Market research - Significance of Market research - Market research process - Problems encountered by marketing research.

UNIT 2 RESEARCH DESIGN FORMULATION 9

Research design - Exploratory research design - Qualitative research - Descriptive research design - Causal research design: Experimentation - Questionnaire and form design – Testing of Instrument: Validity and Reliability.

UNIT 3 DATA COLLECTION 9

Data Collection: Primary and secondary data – Questionnaire design and issues – Interviews – Measurement scaling techniques – Sampling design: Sampling procedure, types of sampling – Sample size determination – Data reliability and validity – Pilot testing – Bias and error minimization.

UNIT 4 DATA ANALYSIS 10

Frequency distribution - cross-tabulation - hypothesis testing - Analysis of variance and covariance - Correlation and regression - Discriminant and Logit analysis - Factor analysis - Cluster analysis - Multidimensional scaling and Conjoint analysis - Structural equation modelling – hands-on exercise with real-time market research cases.

UNIT 5 REPORTING **9**

Reporting the results – Ethical issues in marketing research – Preparing marketing research reports and presentations – Format of the report – Graphical presentation of reports – Interpreting findings – Communicating insights effectively – Citation and referencing – Ensuring transparency and integrity.

TOTAL 45 HOURS

TEXTBOOKS

1. Marketing Research, An Applied Orientation, 6th Ed, Naresh Malhotra and Satyabhushan Dash, Pearson Education.
2. Multivariate Data Analysis, 5th Ed, Hair, Anderson, Tatham and Black, Pearson Education.

REFERENCE BOOKS

1. Marketing to Mindstates: The Practical Guide to Applying Behavior Design to Research and Marketing by will leach.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3329	MULTI–CHANNEL SALES MANAGEMENT	3	0	0	3

LEARNING OUTCOMES

CO1	Demonstrate an understanding of sales management, theories and personal selling strategies.
CO2	Demonstrate an understanding of the design and structure of Channel based Sales.
CO3	Examine the various methods of Sales force recruitment and management.
CO4	Examine the various methods of managing distribution Channels.
CO5	Appreciate the role of Logistics strategy and planning for Customer oriented Channel management.

UNIT 1 SELLING PROCESS **9**

Buying Process, Organizational Buying Process, Steps in the Selling Process, The Funnel, Sales Presentation methods, Handling Objections, Negotiation, Closing, Relationship selling Strategy.

UNIT 2 SALES PLANNING **9**

Sales Forecasting methods, Sales Budget; Designing Sales Territories, Sales Quotas and Sales contests, Sales Organization Structures, Key Account Management, Sales Force Expenses and transportation.

UNIT 3 SALESFORCE MANAGEMENT **9**

Sales Force Size & Workload planning, Job Analysis, Recruitment and Selection of Sales Force, Sales Training, Motivating Sales Personnel- Concepts, Types of rewards, Compensating Sales Personnel- Objectives, Its Components, designing a Compensation Plan, Productivity Analysis, Evaluating Sales Performance by developing suitable metrics.

UNIT 4 CHANNEL MANAGEMENT **9**

Introduction to Distribution Management, Channel Design and planning process, evaluating major Alternatives, Selecting Channel partners, Channel Conflict, Ways of managing channel conflict, Distribution management for Services, Distributor network relations, B2B Channel management.

UNIT 5 CUSTOMER ORIENTED LOGISTICS AND SUPPLY CHAIN MANAGEMENT 9

Logistics - Scope, definition and components. Managing FG Inventory & warehousing. Transportation - Scope, Modes and role in Supply Chain effectiveness. Use of Information Technology in Online Selling and Goods tracking.

TOTAL 45 HOURS

TEXTBOOKS

1. Krishna K Havaldar and Vasant M Cavale, Sales and Distribution Management, Text and Cases; 4th Edition, McGraw Hill.

REFERENCE BOOKS

1. Sales and Distribution Management, Tapan K. Panda, Sunil Sachdev, 3rd Edition, Oxford, 2019.

2. Richard R. Still, Edward W. Cundiff, Norman A. P. Govoni, Sandeep Puri, Sales and Distribution Management, 6th Edition, Pearson, Jul. 2017.

3. Sapiro, Stanton & Rich, Management of Sales Force, , 12th Edition, Tata McGraw Hill.

4. Churchill Ford, Walker Johnston and Tanner, Sales Force Management 6th Edition, TataMcGraw Hill, 2012.

5. Charles M Futrell, Sales Management, 6th Edition, Thomson South Western Publication.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3421	RETAIL MANAGEMENT	3	0	0	3

LEARNING OUTCOMES

CO1	Identify the various elements that are required to develop a detailed plan and strategy for a retail operation.
CO2	Demonstrate an understanding of consumer behaviour and decision making processes with respect to retail.
CO3	Plan and design retail operations including interior and exterior atmospherics, merchandise management, manpower planning and financial viability.
CO4	Demonstrate an understanding of new technologies and developments that impact retail management.

UNIT 1 AN OVERVIEW OF STRATEGIC RETAIL MANAGEMENT 9

Define retailing; Understand the framework of retailing; the value of developing and applying a sound retail strategy.

Situation Analysis - Retail classification; retail ownership patterns and characteristics; Manufacturer-distribution channel – retail interface and influences.

Targeting Customers & Gathering Information - Identify, understand appeal to consumers; consumer characteristics, demographics and psychographics; needs & desires; impact on retailing; consumer attitudes toward shopping and consumer shopping behavior; consumer decision process and its stages.

UNIT 2 STORE LOCATION AND RETAIL BUSINESS MANAGEMENT 9

Choosing a Store Location - Demonstrate the importance of store location for a retailer; outline the process for choosing a store location; discuss the concept of a trading area and its related components; three major factors in trading-area analysis.

Managing a Retail Business - Study the procedures involved in setting up a retail organization; various organizational arrangements utilized in retailing consider the special human resource environment of retailing; describe the principles and practices involved with the human resource management processes in retailing.

UNIT 3 MERCHANDISING MANAGEMENT & PRICING **9**

Demonstrate the importance of a sound merchandising philosophy; study various buying organization formats and the processes they use; outline the considerations in devising merchandise plans: forecasts, innovativeness, assortment, brands, timing, and allocation; category management.

UNIT 4 COMMUNICATING WITH THE CUSTOMER **9**

Importance of communicating with customers and to examine the concept of retail image – how a retail store image is related to the atmosphere it creates via its exterior, general interior, layout, and displays.

UNIT 5 INFLUENCES OF TECHNOLOGY IN RETAIL **9**

The digital transformation of retail; AI vs. traditional analytics in retail decision-making; AI-driven customer segmentation & targeting; predictive analytics for sales forecasting; IoT in retail; smart shelves, RFID, automated checkout; Omnichannel strategies - integrating online & offline retail; customer journey mapping using analytics; Augmented & Virtual Reality in shopping experiences.

TOTAL 45 HOURS

REFERENCES BOOKS

1. Berman, Evans, Chatterjee - Retail Management - A Strategic Approach 13e – Pearson.
2. Swapna Pradhan, Retailing Management, 5th Edition, McGraw Hill Education.
3. Chetan Bajaj, Rajnish Tow and Nidhi V. Srivatsava, Retail Management, Oxford University Press, 3rd Edition 2016.
4. Online resources like HBR, McKinsey, Gartner etc., for technology resources.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3422	MARKETING ANALYTICS	3	0	0	3

LEARNING OUTCOMES

CO1	Evaluate marketing performance using analytical tools, statistical methods, and R programming.
CO2	Apply data-driven models for customer profiling, segmentation, and marketing optimization.
CO3	Perform consumer behavior analysis using quantitative and qualitative data mining techniques.
CO4	Design and implement real-time marketing analytics projects to generate actionable business insights.

UNIT 1 INTRODUCTION TO MARKETING ANALYTICS AND R PROGRAMMING 9

Necessity of Marketing Analytics in Business Decision Making – R environment setup – Data types – Operators – Functions – Data frames – Data reshaping – File types – Charts – plots – Functions of basic statistics.

UNIT 2 CUSTOMER PROFILING AND MARKETING 9

Customer segmentation and targeting – Demand forecasting and pricing – Marketing mix models – Advertising models – Price optimization – Promotion effectiveness – Channel performance analysis – Media planning – ROI measurement.

UNIT 3 CONSUMER ANALYSIS 9

Recommender system – Market basket analysis – RFM analysis – Customer churn – Customer lifetime value – Survival analysis – Logistic regression – Purchase pattern detection – Predictive modeling for retention – Cross-selling and upselling strategies.

UNIT 4 QUALITATIVE DATA MINING 9

Text mining – Sentiment analysis – Social Network Analysis for Marketing – Text classification – Opinion mining – Influencer detection – Community detection – Brand monitoring – Consumer behavior analysis – Campaign performance evaluation.

UNIT 5 CONCEPT IMPLEMENTATION **9**

Individual project with real-time data and demonstration – Problem definition – Model building – Performance evaluation – Business insight generation – – Report writing – Final presentation and review.

TOTAL 45 HOURS

REFERENCE BOOKS

1. R for Marketing Research and Analytics – Chris Chapman & Elea McDonnell Feit (Springer, 2015).
2. Marketing Analytics for Strategic Decision-Making – Moutusy Maity & Pavankumar Gurazada (Oxford University Press, 1st Edition).

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3423	SOCIAL MEDIA AND WEB ANALYTICS	3	0	0	3

LEARNING OUTCOMES

CO1	Describe the role of web and social analytics in marketing decision-making and customer engagement.
CO2	Apply key metrics, KPIs, and Google Analytics tools to assess website performance and user behavior.
CO3	Analyze social media data using sentiment analysis, topic modeling, and campaign insights.
CO4	Integrate analytical insights into website optimization, user experience, and strategic marketing decisions.

UNIT 1 FOUNDATIONS OF WEB ANALYTICS 9

Definition and history of web analytics – The evolution of digital marketing – The purchasing funnel in online and offline environments – Introduction to web analytics tools – Types of web analytics (on-site vs. off-site) – Technical overview: cookies, sessions, bounce rates – Web data collection methods – Ethical concerns and privacy in web tracking.

UNIT 2 METRICS, GOOGLE ANALYTICS, AND KPI FRAMEWORKS 9

Overview of Google Analytics: setup, dashboards, and reporting – Understanding metrics and dimensions – Web metrics: users, sessions, time on site, bounce rate – KPIs for web performance – Pyramid Model of Web Analytics – Goals and funnels – Email analytics – Website goals and optimization – Outcome data analysis and web survey interpretation – Attribution modeling (introduction).

UNIT 3 SOCIAL MEDIA ANALYTICS AND NETWORK THEORY 9

Fundamentals of social networks – Platforms: Facebook, Twitter, Instagram, LinkedIn – social media KPIs: engagement, reach, impressions, sentiment – Social listening tools – Facebook analytics – Data-driven decision making in social campaigns – Introduction to influencer and virality analysis – Group assignment: audit of a brand's social media presence.

UNIT 4 TEXT ANALYTICS AND ADVANCED TECHNIQUES 9

Text analytics concepts – Sentiment analysis using social media data – Topic modeling on Twitter data – Social media listening tools – Time series and trend analysis – Text visualization using dashboards – Overview of machine learning applications in digital marketing – Evaluation of web survey and social media data – Business case discussions using marketing datasets.

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UNIT 5 STRATEGY, OPTIMIZATION, AND FUTURE TRENDS 9

Detailed attribution modeling – ROI analysis of digital marketing efforts – Integration of analytics with campaign planning – Reporting and dashboarding for management – A/B testing methods – Strategic application of web and social analytics – Future trends: AI, predictive analytics, personalization – Ethical AI and data governance in digital analytics.

TOTAL 45 HOURS

TEXTBOOKS

1. Avinash Kaushik. Web Analytics 2.0: The Art of Online Accountability and Science of Customer Centricity, Wiley.
2. Matthew Ganis & Avinash Kohirkar, Social Media Analytics: Techniques and Insights for Extracting Business Value.
3. Jim Sterne. Social Media Metrics: How to Measure and Optimize Your Marketing Investment.
4. Marshall Sponder. Social Media Analytics.

REFERENCE BOOKS

1. Oliver Blanchard. Social Media ROI.
2. Dave Chaffey. Digital Marketing: Strategy, Implementation and Practice.
3. Damian Ryan. Understanding Digital Marketing.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3331	BANKING AND FINTECH SERVICES	3	0	0	3

LEARNING OUTCOMES

CO1	Apply fintech innovations, credit monitoring, and risk management techniques to transform traditional banking services.
CO2	Analyze financial performance, modern payment systems, cybersecurity threats, and regulatory technologies to assess the operations of banks and fintech firms.
CO3	Analyze global banking regulations, ESG finance, and Decentralized Finance (DeFi) to assess their impact on financial services and future industry trends.

UNIT 1 FUNDAMENTALS OF BANKING & FINTECH 9

Banking – Definition – Evolution of banking services – Reforms in the banking sector – Banker – Customer relationship – Core banking functions – Deposits, lending, investment activities – Capital adequacy – Concept, Basel Norms I, II, III & IV – The role of technology in redefining banking services - Introduction to fintech – Scope, key trends, and innovations – Neobanks and challenger banks – API-driven banking – Open banking framework and its impact on financial institutions.

UNIT 2 CREDIT MONITORING & TECHNOLOGY APPLICATIONS 9

Credit Analysis – 5 C's of Credit Analysis – Credit appraisal techniques – NPAs and Resolution Mechanisms – Financial distress prediction models – Lok Adalat – DRT & DRAT –S SARFAESI Act – IBC – Risk management – Credit risk – Operational risk – Interest rate risk – Liquidity risk – Market risk – AI in risk management – Blockchain applications in fraud prevention – Cybersecurity threats in digital banking – Alternative lending models – P2P lending, BNPL (Buy Now Pay Later), and digital lending platforms – Case study: AI-driven fraud detection in fintech.

UNIT 3 PERFORMANCE EVALUATION OF BANKS & FINTECH FIRMS 9

Treasury operations – CRR, SLR, LAF – Financial Statement Analysis – Balance Sheet, Income Statement – Ratios applicable to banks and fintech firms – CAMELS rating – Performance measurement frameworks – Fintech revenue models (Subscription, Freemium, Transaction fees, API monetization) – Case study: Business model of N26/Chime (digital banks).

UNIT 4 DIGITAL PAYMENTS & CUSTOMER EXPERIENCE IN FINTECH 9

Overview of digital payment systems: RTGS, NEFT, UPI, digital wallets – Evolution from paper- based to electronic payments – AI-driven banking services: chatbots and robo-advisors – Major cybersecurity threats in digital transactions: phishing, identity theft, SIM cloning, and data breaches – Overview of cybersecurity regulations in banking: RBI Cybersecurity Framework (2016) and authentication guidelines – Role of RegTech in strengthening fraud detection.

UNIT 5 LEGAL & FUTURE TRENDS IN BANKING & FINTECH 9

Overview of RBI Act 1934 and Banking Regulations Act 1949 – Rights and obligations of a banker – Ombudsman and customer services – Digital banking regulations – International fintech regulations (PSD2, Dodd-Frank, GDPR) – Central Bank Digital Currencies (CBDCs) – Decentralized Finance (DeFi) – ESG banking and sustainable fintech solutions – Role of banks & fintech in green finance and climate risk management.

TOTAL 45 HOURS

TEXTBOOKS

1. Padmalatha Suresh & Justin Paul, Management of Banking and Financial Services, 5th Edition, Pearson, Delhi, 2017.
2. Brett King, Bank 4.0: Banking Everywhere, Never at a Bank, Wiley, 2018.
3. Susanne Chishti & Janos Barberis, The FinTech Book: The Financial Technology Handbook for Investors, Entrepreneurs & Visionaries, Wiley, 2016.
4. Moorad Choudhry, The Principles of Banking, 2nd Edition, Wiley, 2022.

REFERENCE BOOKS

1. Bharati Pathak, Indian Financial Systems, 5th Edition, Pearson, New Delhi.
2. Peter S. Rose & Sylvia C. Hudgins, Bank Management and Financial Services, Tata McGraw Hill, 2012.
3. Ahmed Siddiqui, The Anatomy of the Swipe: Making Money Move, 2020.
4. Jeffrey C. Hooke, Security Analysis and Business Valuation on Wall Street, 2nd Edition, Wiley, 2023.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3332	FINANCIAL STATEMENT ANALYSIS	3	0	0	3

LEARNING OUTCOMES

CO1	Apply knowledge of financial statements and their key components to interpret and analyze corporate financial reports effectively.
CO2	Utilize qualitative and quantitative techniques to analyze corporate performance, financial health, and valuation by linking financial statements to business value.
CO3	Assess the impact of variations in financial statement components on corporate valuation, profitability, and strategic decision-making.
CO4	Develop and evaluate financial models for valuation, forecasting, and decision-making using Excel and other analytical tools.

UNIT 1 INTRODUCTION TO FINANCIAL STATEMENT ANALYSIS 9

Introduction to Financial Statement Analysis: Business Analysis – Reporting environment – Meaning, significance, types, and limitations of financial statements – Accounting policies, regulations of financial accounting, and accounting choices/practices. Concept, Nature, Objectives and Limitations of Financial Statements – Analysis and Interpretation of Financial Statements – Types and methods of Analysis and Interpretations – Comparative Financial Statements; Common Size Statements, Trend Analysis and Fund Flow Analysis.

UNIT 2 ANALYSIS OF FINANCING, INVESTING & OPERATING ACTIVITIES 10

Analysis of Financing Activities: Management of current and non-current liabilities – Off balance sheet financing – Related ratios. Analysis of Investing Activities: Tangible and Intangible Assets – Investments – Current Assets – Inter corporate investments – Related ratios. Analysis of Operating Activities: Measurement of Income – Nonrecurring items – Revenue recognition – Deferred charges – Employee Costs – Interest income – Income Tax – Related ratios.

UNIT 3 CASH FLOW ANALYSIS 9

Cash flow analysis – Relevance – Calculation of Cash from operations, financing and investing activities – Ratios for cash flow analysis – Analysis and interpretation of the cash flow statement – Suggestions and remedial measures.

UNIT 4 RETURNS, CREDIT AND CAPITAL STRUCTURE 10

Returns and Profitability analysis – Importance – Different types of returns and their calculations – Ratios – analysis & interpretation – Suggestions and Corrective measures. Credit Analysis – Liquidity analysis – Operating activity analysis of liquidity – other ratios. Capital Structure and Solvency analysis – Coverage ratios.

UNIT 5 EARNINGS AND COMPREHENSIVE ANALYSIS 7

Earnings analysis & valuation – Determinants – Related Ratios. Application of Financial Statement Analysis – Steps involved – Building Blocks – Comprehensive case analysis.

TOTAL 45 HOURS

TEX BOOKS

1. K.R. Subramanyam, Financial Statement Analysis, 11th Edition, Tata McGraw-Hill Education.

REFERENCE BOOKS

1. Stephen Penman, Financial Statement Analysis and Valuation, 4th Edition, McGraw-Hill Education.
2. Paul M. Healy & Krishna G. Palepu – Business Analysis and Valuation: Using Financial Statements, 5th Edition, Cengage Learning.
3. John J. Wild, K.R. Subramanyam & Robert F. Halsey – Financial Statement Analysis, 12th Edition, McGraw-Hill Education.
4. Martin Fridson & Fernando Alvarez – Financial Statement Analysis: A Practitioner's Guide, 5th Edition, Wiley.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3333	SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT	3	0	0	3

LEARNING OUTCOMES

CO1	Identify the investment process, including the relationship between risk and return, and compare various investment alternatives.
CO2	Apply the understanding of the operations of securities markets, the roles of market participants, and the regulatory framework to assess their impact on market performance.
CO3	Conduct fundamental and technical analysis of industries, companies, and securities using appropriate analytical techniques and tools.
CO4	Construct and evaluate investment portfolios and apply wealth management principles aligned with client objectives and risk profiles.

UNIT 1 INVESTMENT SETTING 9

Financial and economic meaning of investment – Characteristics and objectives of investment – Types of investment – Investment alternatives: equity, debt, mutual funds, gold, real estate – Risk and return concepts – Sources of risk: market, interest rate, inflation, liquidity, credit, and portfolio risk – Technological changes in investing – Evaluation of investment choices using return-risk trade-off.

UNIT 2 SECURITIES MARKETS 9

Overview of financial markets – Market segments and participants – Regulatory environment: SEBI and RBI roles – Primary market operations: IPOs, FPOs, book building – Stock exchanges in India – Secondary market operations – Order types, trading mechanisms – Clearing and settlement – Bond markets and debt instruments – Recent reforms in Indian capital markets.

UNIT 3 FUNDAMENTAL ANALYSIS & INVESTMENT STRATEGIES 6

Economic analysis and forecasting – Macroeconomic indicators and their influence on stock prices – Industry analysis: classification, lifecycle, and competition – Introduction to company analysis: earnings, growth expectations, and valuation basics – Growth vs. value investing – Graham and Dodd approach – Use of economic data in investment strategy formulation.

UNIT 4 TECHNICAL ANALYSIS & MARKET EFFICIENCY 9

Basics of technical analysis – Charting techniques: line, bar, candlestick – Trend analysis and patterns – Moving averages and oscillators – Market indicators and volume analysis – Efficient Market Hypothesis: forms and implications – Random walk theory – Challenges to market efficiency – Behavioural finance overview.

UNIT 5 PORTFOLIO & WEALTH MANAGEMENT **12**

Portfolio analysis and Markowitz Modern Portfolio Theory – Capital Asset Pricing Model (CAPM) – Arbitrage Pricing Theory (APT) – Sharpe's Single Index Model – Portfolio performance evaluation: Treynor, Sharpe, Jensen measures – Portfolio revision techniques – Wealth management: client profiling, goal-based investing, risk tolerance assessment, asset allocation strategies, retirement planning basics, role of financial advisors and robo-advisors.

TOTAL 45 HOURS

TEXTBOOKS

1. Prasanna Chandra, Investment Analysis and Portfolio Management, 5th Edition McGraw Hill Education

REFERENCE BOOKS:

1. Donald .E. Fischer and Ronald J. Jordan, Security Analysis and Portfolio Management, 7th Edition, Pearson, 2018.
2. Punithavathy Pandian, Security Analysis and Portfolio Management, 2nd Edition, Vikas Publishing House Pvt Ltd.
3. Reilly and Brown, Investment Analysis and Portfolio Management, 10th Edition Cengage Learning, India.
4. Bodie, Kane, Marcus and Mohanty, Investments, 11th Edition McGraw Hill.
5. Jay M Desai and Nisarg A Joshi, Investment Management, 1st Edition Biztantra Publishers.
6. M. Ranganatham and R. Madhumathi, Security Analysis and Portfolio Management, 2nd Edition, Pearson.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3334	STRATEGIC RESTRUCTURING AND SUSTAINABLE FINANCE	3	0	0	3

LEARNING OUTCOMES

CO1	Examine corporate restructuring strategies and sustainable finance principles, including ESG integration and governance.
CO2	Analyze financial restructuring scenarios using valuation techniques, risk assessment, and sustainability-driven investment strategies.
CO3	Evaluate the role of regulatory frameworks and financial instruments in shaping sustainable corporate strategies.
CO4	Assess emerging trends and technological advancements in restructuring, with a focus on AI, blockchain, and digital finance.

UNIT 1 INTRODUCTION TO CORPORATE RESTRUCTURING & SUSTAINABLE FINANCE 8

Corporate restructuring – Definition, objectives, and significance – Types of restructuring: Mergers, acquisitions, divestitures, spin-offs, LBOs – Key drivers of restructuring: Financial distress, strategic realignment, market trends – Introduction to sustainable finance – ESG principles and corporate governance – Regulatory landscape: Sustainability reporting, green finance policies – Case study: Corporate transformation through ESG-driven restructuring.

UNIT 2 FINANCIAL & STRATEGIC ASPECTS OF RESTRUCTURING 10

Financial distress and turnaround strategies – Debt restructuring: Bankruptcy, liquidation, and reorganization – Leveraged buyouts (LBOs), management buyouts (MBOs) – Valuation techniques in restructuring: Discounted cash flow (DCF), comparable company analysis, asset-based valuation – Cost-benefit analysis and risk assessment in restructuring – Stakeholder impact: Employees, investors, and creditors – Case study: Financial restructuring and value creation in a distressed company.

UNIT 3 SUSTAINABLE FINANCE & INVESTMENT STRATEGIES 9

ESG integration in corporate finance – Sustainable investing: Impact investing, socially responsible investing (SRI) – Green bonds and sustainability-linked loans – The role of banks, financial institutions, and regulators in promoting sustainable finance – Carbon accounting and sustainable supply chain financing – Climate risk and financial resilience – Case study: Implementation of sustainable financing in corporate transformation.

UNIT 4 MERGERS, ACQUISITIONS & POST-MERGER SUSTAINABILITY 10

Mergers and acquisitions (M&A) – Objectives, valuation methods, and financing – ESG considerations in due diligence and post-merger integration – Sustainable value creation in M&A – Governance and ethical considerations in corporate restructuring – Restructuring supply chains for sustainability – Circular economy principles and corporate responsibility – Case study: ESG integration in a major corporate acquisition.

UNIT 5 FUTURE TRENDS & CORPORATE RESILIENCE 8

Emerging trends in corporate restructuring – The role of digital transformation and fintech in sustainable finance – Climate risk management and resilience strategies – Evolving regulatory frameworks for corporate sustainability – Ethical leadership and responsible restructuring practices – The future of sustainable restructuring: AI, blockchain, and decentralized finance (DeFi) – Case study: The role of digital finance in sustainability-driven restructuring.

TOTAL 45 HOURS

TEXTBOOKS

1. Schoenmaker, Dirk, and Willem Schramade. Principles of Sustainable Finance, Oxford University Press, 2018.
2. Gaughan, Patrick A. Mergers, Acquisitions, and Corporate Restructurings, 7th Edition, Wiley, 2021.

REFERENCE BOOKS

1. Damodaran, Aswath. Applied Corporate Finance, 4th Edition, Wiley, 2017.
2. King, Brett. The Rise of Tech-Driven Sustainable Finance, McGraw-Hill, 2023.
3. Brealey, Richard A., Stewart C. Myers, and Franklin Allen. Principles of Corporate Finance, 13th Edition, McGraw-Hill, 2022.
4. OECD. Financing Sustainable Development: Drivers, Challenges, and Solutions, OECD Publishing, 2020.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3335	FINANCIAL CYBERSECURITY AND FRAUD MANAGEMENT	3	0	0	3

LEARNING OUTCOMES

CO1	Understand the Fundamentals of Financial Cybersecurity
CO2	Identify Cyber Threats in the Financial Sector
CO3	Analyze the various types of Cyber Crimes in Financial Systems
CO4	Assess Fraud Risk Management Strategies
CO5	Evaluate Future Trends in Financial Cybersecurity

UNIT 1 INTRODUCTION TO FINANCIAL CYBERSECURITY 9

Overview of Financial Cybersecurity - What is Cyber Security? - Concept and Scope of cyber security – Cyber security objectives (Confidentiality, Integrity, Availability - CIA Triad) – Importance of Financial Cybersecurity - Evolution of Financial Cybersecurity - Digital Economy and related threats – Threat Actors (Hackers, Organized Cybercrime Groups, Nation-State Attacks). Cyber Espionage and Financial Repercussions of Cyber Attacks.

UNIT 2 CYBER THREATS IN FINANCE 9

Common Cyber Threats in Finance - Threats Against End Customers (Phishing, Identity Theft, Payment Frauds) - Threats Against Financial Institutions (Data Breaches, Insider Threats, Ransomware, Malware and Ransomware, Denial-of-Service (DoS) Attacks, Insider Threats, Data Breaches) – Case studies on recent cyber threats.

UNIT 3 CYBER CRIME IN FINANCIAL SYSTEMS 9

Introduction to Cyber Crime in Finance – Definition, Characteristics and Evolution - Cyber Crime vs. Traditional Financial Crime Types of Cyber Crimes in Financial Systems - Identity Theft and Financial Impersonation - Online Banking and Payment Frauds - Carding, ATM Skimming and Cryptocurrency Frauds - Dark Web Transactions Regulatory and Legal Framework for Cyber Crime Prevention - IT Act, 2000 and Amendments (India) - RBI Cybersecurity Guidelines on Cyber Crime Prevention - Case Studies on Cyber Crime in Finance.

UNIT 4 FRAUD MANAGEMENT IN FINANCIAL SYSTEMS 9

Introduction to Fraud - Definition and Characteristics of a Fraudster - The Fraud Triangle in Financial Services. Fraud Risk Categories - Internal Fraud (Loan Fraud, Mortgage Fraud, Looting and Embezzlemen, Illegal Financial Transactions, Fraudulent Financial Reporting, Deceiving Borrowers, Investors, and Regulators) - External Fraud (Externally Perpetrated Loan Fraud (Nonmortgage), Externally Perpetrated Mortgage Fraud Schemes) - Case Studies.

UNIT 5 FUTURE TRENDS AND INNOVATIONS IN FINANCIAL CYBERSECURITY 9

Emerging Technologies in Cybersecurity - Artificial Intelligence (AI) and Machine Learning (ML) - Blockchain and Quantum Security. Cybersecurity in Digital Currencies - Central Bank Digital Currencies (CBDCs) - Cybersecurity Challenges in Cryptocurrency. Cloud Security for Financial Institutions.

TOTAL 45 HOURS

TEXTBOOKS

1. Ozkaya, Erdal, and Milad Aslaner. Hands-On Cybersecurity for Finance: Identify vulnerabilities and secure your financial services from security breaches. Packt Publishing Ltd, 2019.
2. Cahero Tatto. “Cybersecurity in Finance: Protecting Financial Data and Systems.”
3. Goldman, Peter. "Financial Services Anti-Fraud Risk and Control Workbook." ABD: John Wiley&Sons, Inc (2010).

REFERENCES BOOKS

1. Rohmeyer, Paul, and Jennifer L. Bayuk. Financial cybersecurity risk management: leadership perspectives and guidance for systems and institutions. Apress, 2019.
2. Saporta, Gilit, and Shoshana Maraney. Practical Fraud Prevention. " O'Reilly Media, Inc.", 2022.
3. Fowler, Kevvie. Data breach preparation and response: Breaches are certain, impact is not. Syngress, 2016.
4. Daswani, Neil, and Moudy Elbayadi. Big breaches: cybersecurity lessons for everyone. New York: Apress, 2021.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3461	FINANCIAL ANALYTICS	2	0	2	3

LEARNING OUTCOMES

CO1	Understand the scope and significance of financial analytics in decision-making.
CO2	Use statistical and visualization techniques to analyze financial data and predict trends.
CO3	Apply advanced models such as NLP, regression, and risk measurement for financial analysis.
CO4	Evaluate investment portfolios using risk-return analysis and trading strategies.
CO5	Examine AI, machine learning, blockchain, and algorithmic trading in financial analytics, considering ethical and regulatory aspects.

UNIT 1 INTRODUCTION TO FINANCIAL ANALYTICS & DATA HANDLING 12

Introduction to Financial Analytics – Scope, Importance, and Applications. Types of data in Finance (cross-sectional, panel, time series) - Sources of data (Market Data, Accounting Data, Alternative Data Sources) - Quality of Data (Ensuring Accuracy, Consistency, and Completeness) Data Collection, Cleaning, and Processing - Handling Missing Values, Data Transformation. Preprocessing Techniques – Normalization, Feature Engineering, Handling Outliers. Tools & Technologies – Excel for Financial Analytics - Concepts of simulation, decision-making, and uncertainty - Historical and Monte Carlo.

UNIT 2 EXPLORATORY DATA ANALYSIS & ACCOUNTING ANALYTICS 12

Statistical Methods, Data Visualization Techniques - Financial Ratios - Time-Series Analysis. Time Series Analysis & Forecasting Techniques - Exponential Smoothing and Classical Linear Regression Models - Autocorrelation (ACF), Partial Autocorrelation (PACF), and Correlogram - Stationary vs. Non-Stationary Time Series - ARMA Models for Stationary Time Series- ARIMA (p, d, q) Models – Financial Data Analysis and Forecasting.

UNIT 3 ADVANCED ANALYTICS AND MODELS IN FINANCE 12

Applications of Natural Language Processing (NLP) in Finance – Sentiment Analysis, Text Mining in Financial Reports. Multiple Regression Models for financial data - Risk Measurement Techniques: Market risk, Value at Risk (VaR) - Logit and Probit Models. Valuation Analytics – Discounted Cash Flow (DCF), Relative Valuation, Enterprise Value Estimation.

UNIT 4 INVESTMENT & PORTFOLIO ANALYTICS 12

Portfolio Optimization and Analytics - Modern Portfolio Theory (MPT). Concepts of Risk and Return Risk-Return Trade-off and Portfolio Diversification - Capital Asset Pricing Model (CAPM). Trading Strategies - Technical Indicators. Portfolio Construction and Portfolio Performance Evaluation - Equity and Bond Valuation methods - Black-Scholes-Merton Option Pricing Model - Practical applications using Excel.

UNIT 5 APPLICATIONS & FUTURE TRENDS IN FINANCIAL ANALYTICS 12

Big Data & AI in Finance – Role of AI/ML, Blockchain in Financial Analytics - Algorithmic Trading & Market Prediction – Automated Trading Systems, High-Frequency Trading - Ethical & Regulatory Aspects in Financial Analytics – Compliance, Data Privacy, Cybersecurity in Finance

TOTAL 60 HOURS

TEXTBOOKS

1. Mohanty, Pitabas. Financial Analytics. New Delhi: Wiley India Pvt. Ltd., 2023.
2. Sinem, D. K. (2022). Financial data analytics: Theory and application.

REFERENCE BOOKS

1. Tsay, R.S. (2010). Analysis of Financial Time Series. (3rded.). New York, NY: John Wiley.
2. Koop, G. (2006). Analysis of Financial Data.John Wiley.
3. Damodaran, A. (2008). Investment Valuation.John Wiley.
4. Albright, S.C, Zappe, C.J & Winston, W.L. (1980). Data analysis, Optimization, and Simulation modelling. South-Western: Cengage Learning.
5. Dowd, K. (2005). Measuring Market Risk. John Wiley.
6. Hull, J.C. (2015). Risk Management and Financial Institution.John Wiley.
7. Fabozzi, F.J. (2015). Quantitative Financial risk Management.John Wiley.
8. Elton, E.J, Gruber, M.J & Brown, S.J. (2014). Modern Portfolio Theory and Investment Analysis.John Wiley.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3425	BEHAVIORAL FINANCE	3	0	0	3

LEARNING OUTCOMES

CO1	Understand the need and importance to explore investor's behavioral biases that influence the stock market.
CO2	Appreciate and apply the underlying theories and concepts explaining the nuances of behavioral finance.
CO3	Assess investment portfolio and asset allocation strategies by evaluating the influence of investors' behavioral biases.
CO4	Evaluate the inherent biases of managers and investors that affect the corporate decisions of the firm.

UNIT 1 INTRODUCTION TO BEHAVIORAL FINANCE 10

Behavioral Finance – Definitions, Assumptions, and Introduction to Behavioral Economics. Behavioral Finance vs. Traditional Finance. Investors, portfolio managers, analysts: are they rational? – Dollar Auction Game – Rational Investors Vs Irrational Investors, Market Bubbles. Price Fluctuations in Stock Market - Keynesian Beauty Context- Efficient Market Hypothesis (EMH) – Failure of EMH. Arbitrage and Limits to Arbitrage

UNIT 2 BEHAVIORAL THEORIES 9

Decision-Making Theories - Neoclassical Economics. Decision-Making under Risk and Uncertainty – Prospect theory (Kahneman, Tversky), Bounded rationality, Expected Utility Theory – Allias paradox – Monty Hall Dilemma- Ellsberg Paradox; Expected Utility theory vs. Prospect theory

UNIT 3 BEHAVIORAL BIASES 9

Cognitive Biases - Confirmation Bias, Anchoring, Framing Bias, Cognitive Dissonance, Mental Accounting, Hindsight bias - Case Studies Emotional Biases - Loss aversion, overconfidence bias, Self-control, Status quo, Endowment, and regret aversion - Case Studies

UNIT 4 APPLICATIONS OF BEHAVIORAL FINANCE 9

Applying BF in Client Profiling - Psychographic Models: Barnewall two-way model, Bailard, Biehl, and Kaiser Five-Way Model (BB&K), Pompian Behavioral Model - Behavioral Investor Types (BIT) Applying BF in Asset Allocation - Behaviorally Modified Asset Allocation (BMAA), Goal Based Investing (GBI), Behavioral Portfolio Theory – Five-factor Process.

UNIT 5 BEHAVIORAL CORPORATE FINANCE **8**

Behavioral Finance Vs Behavioral Corporate Finance; Biased Investors and Biased Managers - Case Studies Biases in CEO Selection; Biases in CEO Decisions – Biases in Investment Decision, Biases in Financing Decisions; Biases in Corporate Governance; Biases in M&A deals - Case Studies

TOTAL 45 HOURS

TEXTBOOKS

1. Pompian, Michael M. Behavioral finance and wealth management: how to build investment strategies that account for investor biases. John Wiley & Sons, 2011.

REFERENCE BOOKS

1. Shefrin, H. (2002). Beyond greed and fear: Understanding behavioral finance and the psychology of investing. Oxford University Press on Demand.
2. Behavioral Corporate Finance, by U. Malmendier, in Bernheim, D., DellaVigna, S., Laibson,D. (Eds.), Handbook of Behavioral Economics, North Holland, Amsterdam, October 2018.
3. Behavioral Corporate Finance: The Life Cycle of a CEO Career, by M. Guenzel and U. Malmendier, in Oxford Research Encyclopedia of Economics and Finance, September 2020.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3462	FINANCIAL MODELLING AND ANALYSIS	2	0	2	3

LEARNING OUTCOMES

CO1	Understand the nuances of financial modeling and use Excel to build financial models.
CO2	Apply financial statement analysis techniques and establish links between statements using a model.
CO3	Examine the various financial forecasting methods and capital budgeting techniques
CO4	Assess a firm's equity value using different valuation techniques.
CO5	Implement sensitivity and scenario analysis in finance using appropriate tools.

UNIT 1 FINANCIAL MODELLING FUNDAMENTALS 12

Financial Modelling Basics – Defining the Problem the Model Will Solve – Financial modelling process and the steps involved - Inputs and Outputs of a Financial Model – Complex Financial Models – Excel as a Financial Modelling Tool.

UNIT 2 THREE STATEMENT FINANCIAL MODEL 12

Accounting Equation – Balance Sheet and its components – Income Statement and its components – Cash Flow Statement & its components – preparing cash flow statement - understanding the link between all three financial statements - Financial Statement Analysis: Ratio Analysis – different categories of ratios - analyzing and interpreting the trend in ratios – limitation of using ratios

Case 1 – defining the problem statement – Collecting historical data – building in assumptions – selecting key forecast drivers – Modelling the Income Statement – Modelling the Balance Sheet – Modelling the cash Flow Statement - Linking three financial Statements – building a dashboard that helps in monitoring a company's performance – selecting key parameters to monitor & how to build them.

UNIT 3 FORECASTING MODELS 12

Introduction to Forecasting & different Methods of forecasting – Statistical Methods - Straight line Model - Moving average - Simple linear regression - Multiple linear regression - Time Series Analysis. Forecasting all line items of Income statement, Balance Sheet & Cash flow statement - Applications in Excel – Case Studies.

UNIT 4 COMPANY VALUATION MODELS **12**

Time value of money – Annuities – Refresher on Capital Budgeting, NPV, IRR and Payback – Company Valuation – Core Theory behind Company Valuation – Net Asset Approach: meaning & where it is used – Market Approach: description & where it is used – Comparison of market based multiples – Income Approach: description & where it is used - Income approach: Discounted Cash Flow Model in detail – step by step method to building a DCF Valuation model – Determining Cost of equity – calculating asset/stock Beta - Weighted average cost of capital (WACC) and arriving at intrinsic value using Excel - Case Study – Adjustments to EV – Valuation case study using Excel.

UNIT 5 SENSITIVITY AND SCENARIO ANALYSIS **12**

Introduction to Sensitivity Analysis - One-Dimensional and 2-Dimensional Sensitivity Analysis – Choosing correct variable to Change – Building the sensitivity table – Interpretation – Scenario Analysis – More than 2 scenarios – Creating a scenario analysis in Excel – Introduction to Monte Carlo simulation - Case Study.

TOTAL 60 HOURS

TEXTBOOKS

1. Samonas, M. (2015). Financial forecasting, analysis, and modelling: A framework for long- term forecasting. John Wiley & Sons.
2. Benninga, S., & Mofkadi, T. (2006). Principles of finance with excel (Vol. 2). New York, NY: Oxford University Press.

REFERENCE BOOKS

1. Rosenbaum, J., & Pearl, J. (2013). Investment banking: valuation, leveraged buyouts, and mergers and acquisitions (Vol. 881). John Wiley & Sons.
2. Mayes, T. R. (2020). Financial analysis with microsoft excel. Cengage Learning.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3336	COMPENSATION MANAGEMENT	3	0	0	3

COURSE OUTCOMES

CO1	Explain the fundamental concepts and strategic significance of compensation systems, including pay models, pay structures, and total compensation strategies.
CO2	Apply compensation theories and models in real-world scenarios to recommend effective pay policies for various organizational contexts.
CO3	Analyze internal and external factors influencing pay structures, job evaluation methods, and pay levels to develop fair and competitive compensation policies.
CO4	Evaluate different pay-for-performance plans, incentive structures, and benefits to align compensation with employee motivation and organizational goals.
CO5	Compare international pay systems, role of unions and expatriate compensation strategies, to develop effective global compensation policies.

UNIT 1 INTRODUCING THE PAY MODEL AND PAY STRATEGY 10

Compensation – Definition, Importance, Forms of Pay, A Pay Model; Strategy – Similarities and Differences, Strategic Choices, The Pay Model Guides Strategic Pay Decisions, Developing a Total Compensation Strategy, Sources of Competitive Advantage.

UNIT 2 DETERMINING THE STRUCTURE 8

Defining Internal Alignment, What Shapes Internal Structures?, Consequences of Structures, Job Analysis, Job-Based Structures and Job Evaluation, Person-Based Structures.

UNIT 3 DETERMINING THE PAY LEVEL 10

Defining Competitiveness: External Competitiveness, What Shapes External Competitiveness? Labour Market Factors, Modifications to Demand and Supply, Product Market Factors and Ability to Pay, Organizational Factors, Relevant Markets, Competitive Pay Policy Alternatives, Consequences of Pay-Level and Pay-Mix Decisions Designing Pay Levels, Mix, and Pay Structures: Market Line, The Pay-Policy Line Grades, Ranges, Broadbanding, Market Pricing.

UNIT 4 DETERMINING EMPLOYEE PAY 8

Linking Organization Strategy to Compensation and Performance Management, designing a Pay- for-Performance Plan: Short-Term Incentives, Team Incentives, Long-Term Incentives, Performance Appraisals in Compensation Decisions. Strategies to Better Understand and Measure Job Performance, Tying Pay to Subjectively Appraised Performance; Employee Benefits: Legally Required and Miscellaneous.

UNIT 5 COMPENSATION EXTENDED **9**

Compensation for Special Groups: Supervisors, Corporate Directors, Executives, Scientists and Engineers, Sales Forces, Contingent Workers. Union Role in Wage and Salary Administration: The Impact of Unions on Wage, Unions and Alternative Reward Systems. International Pay Systems: Comparing Costs, Comparing Systems, Japanese System, German System, United States; Strategic Market Mindset and Expatriate Pay.

TOTAL 45 HOURS

TEXTBOOKS

1. Milkovich, Newman and Venkata Ratnam, "Compensation", Tata McGraw Hill, 10th Edition.

REFERENCES BOOKS

1. Nelson D.L, and Quick J.C, Organizational Behavior, 6th Edition, Cengage Learning (2024)
2. HBR and other Cases:
    a. Gravity Payments: $70,000 Minimum Salary Company
    b. Golden Careers: Money Isn't Everything
    c. Merit Raise Exercise: Kaymak Consulting
    d. Arck Systems
    e. Brewing Barista Discontent at Starbucks
    f. PF exercise

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3337	COMPETENCY FRAMEWORK FOR MANAGER DEVELOPMENT	3	0	0	3

LEARNING OUTCOMES

CO1	Understand the fundamentals of competency frameworks and their role in managerial development.
CO2	Apply competency mapping techniques to identify critical competencies for various roles.
CO3	Analyse competency assessment methods and design competency-based training interventions.
CO4	Evaluate competency-based HR practices and their impact on organizational effectiveness.
CO5	Explore emerging trends in competency frameworks and their implications for future leadership development.

UNIT 1 INTRODUCTION TO COMPETENCY FRAMEWORKS 9

Definition and Importance of Competencies - Competency vs. Skill and Knowledge - Types of Competencies: Core, Functional, and Leadership - Evolution and Theoretical Foundations of Competency-Based Management - Competency Models: Industry Practices and Applications.

UNIT 2 COMPETENCY MAPPING AND IDENTIFICATION 9

Process of Competency Mapping - Job Analysis and Role Profiling for Competency Identification - Behavioral Event Interview (BEI) Technique - Developing Competency Dictionaries - Challenges in Competency Mapping.

UNIT 3 COMPETENCY ASSESSMENT AND DEVELOPMENT 9

Methods of Competency Assessment (Self, 360-Degree, Assessment Centers) - Designing Competency-Based Training and Development Programs - Linking Competency Development with Career Planning - Leadership Development through Competency Enhancement - Case Studies on Competency-Based Development.

UNIT 4 COMPETENCY-BASED HR PRACTICES 9

Competency-Based Recruitment and Selection - Competency-Based Performance Management Systems (PMS) - Competency-Based Compensation and Reward Systems - Aligning Competency Framework with Organizational Strategy - Best Practices in Competency-Based HRM.

UNIT 5 EMERGING TRENDS AND FUTURE OF COMPETENCY FRAMEWORKS 9

Digital Transformation and Competency Development - AI and HR Analytics in Competency Management - Emotional and Cultural Intelligence in Competency Frameworks - Global Competency Models and Standardization - Future Trends in Managerial Competency Development.

TOTAL 45 HOURS

TEXTBOOK

1. Dubois, D. D., & Rothwell, W. J. (2018). Competency-Based Human Resource Management (2nd ed.). Nicholas Brealey Publishing.

REFERENCE BOOKS

1. Boyatzis, R. E. (2021). The Competent Manager: A Model for Effective Performance (2nd ed.). John Wiley & Sons.
2. Spencer, L. M., & Spencer, S. M. (2020). Competence at Work: Models for Superior Performance (1st ed.). Wiley India.
3. Sanghi, S. (2022). The Handbook of Competency Mapping: Understanding, Designing, and Implementing Competency Models in Organizations (3rd ed.). Sage Publications India.
4. Parry, S. B. (2019). The Quest for Competence: Developing Human Potential (1st ed.). HRD Press.
5. Moorhouse, H. F. (2023). Competency-Based Talent Management: Building a Sustainable Workforce (1st ed.). Routledge.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3338	HR OPERATIONS AND AUTOMATIONS	3	0	0	3

LEARNING OUTCOMES

CO1	Explain the key functions of HR operations and the impact of digital transformation on HR service delivery.
CO2	Evaluate and implement HRMS solutions to automate core HR functions such as recruitment, payroll, and employee self-service.
CO3	Apply HR analytics tools and techniques to analyse workforce data and support strategic HR decision-making.
CO4	Demonstrate knowledge of HR compliance, legal aspects, and data security measures in automated HR environments.
CO5	Assess the role of emerging HR technologies such as AI, blockchain, and cloud solutions in shaping the future of HR management.

UNIT 1 INTRODUCTION TO HR OPERATIONS AND DIGITAL TRANSFORMATION 9

Overview of HR Operations: Functions and Importance - HR Service Delivery Models (Centralized, Decentralized, Hybrid) - Introduction to HR Digital Transformation - Role of Technology in HR Management - HR Shared Services & HR Business Process Outsourcing (HR BPO).

UNIT 2 HR PROCESS AUTOMATION AND HRMS 9

Fundamentals of HR Process Automation - HRMS (Human Resource Management System) – Features and Benefits - Popular HRMS Software: SAP SuccessFactors, Workday, Oracle HCM, BambooHR - Automating Recruitment, Payroll, Leave & Attendance Management - Employee Self-Service (ESS) & Manager Self-Service (MSS).

UNIT 3 HR ANALYTICS AND DATA-DRIVEN DECISION MAKING 9

Introduction to HR Analytics & Metrics - Workforce Planning & Talent Analytics - Predictive Analytics in HR - AI & Machine Learning Applications in HR - HR Dashboard & Reporting Tools (Power BI, Tableau).

UNIT 4 COMPLIANCE, LEGAL ASPECTS, AND DATA SECURITY IN HR AUTOMATION 9

HR Compliance Management & Audit Processes - Legal Aspects of HR Tech Implementation in India (EPF, ESIC, IT Act, etc.) - Data Security, Privacy, and General Data Protection Regulation (GDPR) in HR Operations - Ethical Issues in HR Automation - Managing HR Risks in a Digital Workplace.

UNIT 5 EMERGING HR TECHNOLOGIES AND FUTURE TRENDS 9

Chatbots and AI in HR (Virtual Assistants, AI-driven Interviews) - Cloud-based HR Solutions & SaaS HR Technologies - Blockchain in HR (Payroll, Background Verification, Smart Contracts) - The Future of Work: Gig Economy & Remote Work Management - Case Studies on HR Digital Transformation.

TOTAL 45 HOURS

TEXTBOOKS

1. Michael Armstrong – Armstrong's Handbook of HRM Practice (15th Edition, 2023), Kogan Page, India.

REFERENCE BOOKS

1. Edward E. Lawler & John W. Boudreau – Effective Human Resource Management: A Global Analysis (2nd Edition, 2023), Stanford Business Books, India.
2. Kumar, Prem & Kumar, Rakesh – HR Analytics and Digital HRM (1st Edition, 2023), Sage Publications, India.
3. Stephen J. Perkins & Susan M. Perkins – HR Transformation & Digitalization (2nd Edition, 2022), Oxford University Press, India.
4. Partha Sarathi & S. Mitra – HRMS & HR Tech Implementation Guide (1st Edition, 2022), McGraw Hill Education, India.
5. Dave Ulrich, Jon Younger, Wayne Brockbank & Mike Ulrich – HR from the Outside In: Six Competencies for the Future of HR (1st Edition, 2021), McGraw Hill Education, India.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3339	STRATEGIC HUMAN RESOURCE MANAGEMENT	3	0	0	3

LEARNING OUTCOMES

CO1	Demonstrate an understanding of strategic HRM and its influence on business strategy.
CO2	Illustrate the linkage of business strategy with HR planning.
CO3	Explain the significance of SHRM for gaining and sustaining competitive advantage.
CO4	Explain cross-cultural HR issues in the context of international operations of a company.
CO5	Demonstrate an understanding of strategic HR issues faced by an organization in periods of turbulence and uncertainty.

UNIT 1 ROLE OF SHRM **10**

Introduction to SHRM – Definition – Concept of SHRM Investment - Perspective of SHRM - Need, Importance and Objectives of SHRM – Evolution of SHRM – Difference between SHRM and HRM – Integrating HR Strategy with Business Strategy – Developing Plans and Policies - Barriers to strategic HR - Role of HR in strategic planning - HR Environment – Broad Influences of Technology - Employee Surveillance and Monitoring – e-HR – Workforce Diversity – Demographic Changes – Generational Diversity - Ethical Behaviour.

UNIT 2 STRATEGIC FIT FRAMEWORKS **8**

Strategic fit frameworks - Linking business strategy with HR Strategy - HR bundles approach, best practice approach - Business strategy and human resource planning - HRM and firm performance linkages - Measures of HRM performance - Sustaining competitive advantages through inimitable HR practices.

UNIT 3 HR PLANNING, DESIGN AND REDESIGN OF WORK SYSTEMS **9**

Objectives – Types of Planning – Aggregate Planning – Succession Planning – Design of work systems – What Workers Needed – How Jobs Interface with Other Jobs – Redesign of Work Systems – Strategic Work Redesign in Action – Outsourcing and Off shoring – Mergers and Acquisitions – Understanding Change and Managing Change.

UNIT 4 CROSS-CULTURAL HRM **9**

Domestic vs. International HRM - Cultural Dynamics - Culture Assessment - Cross Cultural Education and Training Programs – Leadership and Strategic HR Issues in International Assignments - Repatriation etc. - Building Multicultural Organization - International Compensation.

UNIT 5 MANAGEMENT OF STRATEGIC HR ISSUES **9**

Retrenchment Strategies – Early Retirement Plans – VRS – Project Based Employment, Downsizing – Pink-slip Concept – Behavioural Issues in Strategic Implementation – Matching Culture with Strategy – – Employee Morale – Personal Values and Business Ethics.

TOTAL 45 HOURS

TEXTBOOKS

1. Jeffrey A Mello, Strategic Human Resource Management, 3rd Edition, Cengage Learning, 2012.

REFERENCE BOOKS:

1. Greer, Charles, “Strategic Human Resource Management”, Pearson Education, Second Edition.
2. Rothwell & Kazanas, Strategic Human Resource Management, HRD Press Inc.,U.S.; Second edition, 2003.
3. Michael Armstrong, Armstrong's Handbook of Strategic Human Resource Management, Publisher: Kogan Page; 6 edition, 2016.
4. Christopher Mabey, Graeme Salaman, John Storey Human Resource Management: A Strategic Introduction (Management, Organizations and Business) Wiley-Blackwell, 2014.
5. Gary Dessler, Human Resource Management, PHI, New Delhi, 2003.
6. Charles R. Greer, Strategic Human Resource Management, Pearson Education, 2003.
7. Luis R. Gomez-Mejia, David B. Balkin, Robert L. Cardy, Managing Human Resources, PHI, 2001.
8. Peter J. Dowling, Denice E. Welch, Randall S. Schuler, International Human Resource Management, Thomson South-Western, 2002.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3341	PEOPLE ANALYTICS	3	0	0	3

LEARNING OUTCOMES

CO1	Explain the fundamentals and significance of People Analytics in HR decision-making.
CO2	Demonstrate the ability to collect, manage, and analyze HR data while ensuring data privacy and security.
CO3	Apply analytical techniques to interpret HR data and derive meaningful insights.
CO4	Utilize People Analytics to enhance various HR functions such as recruitment, performance management, and employee engagement.
CO5	Assess the future of People Analytics and evaluate real-world HR analytics case studies for best practices.

UNIT 1 INTRODUCTION TO PEOPLE ANALYTICS 9

Definition, Scope, and Importance of People Analytics - Evolution of HR Analytics - Role of Data in HR Decision-Making - Ethical and Legal Considerations in HR Analytics - HR Metrics vs. HR Analytics.

UNIT 2 DATA COLLECTION AND MANAGEMENT IN HR 9

Types of HR Data: Structured and Unstructured - Data Sources: HRIS, Surveys, Performance Reviews, Social Media, etc. - Data Cleaning and Preprocessing for HR Analytics - Basics of Database Management and HRIS Integration - Ensuring Data Privacy and Security in HR Analytics.

UNIT 3 ANALYTICAL TECHNIQUES FOR PEOPLE ANALYTICS 9

Descriptive Analytics: HR Dashboards and Reports - Predictive Analytics: Workforce Forecasting, Attrition Prediction - Prescriptive Analytics: Optimization of Workforce Strategies - Key Statistical Techniques: Regression Analysis, Correlation, and Machine Learning Basics - Tools for HR Analytics: Excel, Power BI, Python, R, and AI-driven HR Platforms.

UNIT 4 APPLICATIONS OF PEOPLE ANALYTICS IN HR FUNCTIONS 9

Talent Acquisition Analytics: Sourcing, Hiring, and Onboarding Trends - Employee Engagement and Retention Analytics - Performance Management and Productivity Analytics - Compensation and Benefits Analytics - Diversity and Inclusion Analytics.

UNIT 5 FUTURE TRENDS AND CASE STUDIES IN PEOPLE ANALYTICS 9

Emerging Trends: AI, NLP, and Big Data in HR - The Role of HR in Driving Data-Driven Culture - Challenges and Best Practices in Implementing People Analytics - Case Studies on Successful People Analytics Implementation - Future of People Analytics in Organizations.

TOTAL 45 HOURS

TEXTBOOKS

1. Davenport, T. H., & Harris, J. G. (2023). Competing on Analytics: The New Science of Winning (Updated Edition). Harvard Business Review Press.

REFERENCE BOOKS

1. Pease, G., Byerly, B., & Fitz-enz, J. (2022). Optimize Your Greatest Asset – Your People: How to Apply Analytics to Big Data to Improve Your Human Capital Investments (1st Edition). Wiley.
2. Bersin, J. (2021). HR Technology 2021: The Definitive Guide to Human Resources Technology Strategy and Solutions (Latest Edition). Bersin & Associates.
3. Isson, J.-P., & Harriott, J. S. (2018). People Analytics in the Era of Big Data: Changing the Way You Attract, Acquire, Develop, and Retain Talent (1st Edition). Wiley.
4. Fitz-enz, J., & Mattox, J. (2014). Predictive Analytics for Human Resources (1st Edition). Wiley.
5. Sesil, J. C. (2020). Applying Advanced Analytics to HR Management Decisions: Methods for Selection, Developing Incentives, and Improving Collaboration (1st Edition). Routledge.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3342	TALENT ACQUISITION AND MANAGEMENT	3	0	0	3

LEARNING OUTCOMES

CO1	Analyse the role of talent acquisition in workforce planning and organizational success.
CO2	Evaluate different recruitment and selection strategies to optimize talent acquisition.
CO3	Develop effective employee engagement and retention strategies.
CO4	Implement talent development and performance management strategies.
CO5	Assess the impact of technological advancements and future trends in talent management.

UNIT 1 INTRODUCTION TO TALENT ACQUISITION **9**

Concept and Importance of Talent Acquisition - Workforce Planning and HR Forecasting - Job Analysis, Job Design, and Competency Mapping - Employer Branding and Employee Value - Proposition (EVP) - Legal and Ethical Aspects of Talent Acquisition.

UNIT 2 RECRUITMENT STRATEGIES AND SELECTION PROCESS **9**

Internal vs. External Recruitment - Recruitment Sources: Online & Offline Methods - Selection Process: Screening, Shortlisting, and Assessment Techniques - Psychometric Testing and Competency-Based Interviews - Challenges in Recruitment and Selection.

UNIT 3 ONBOARDING, ENGAGEMENT, AND RETENTION **9**

Employee Onboarding and Socialization Strategies - Employee Engagement and Experience Retention Strategies and Career Development Programs - Succession Planning and leadership Pipeline Development - Diversity, Equity, and Inclusion (DEI) in Talent Management.

UNIT 4 PERFORMANCE MANAGEMENT AND TALENT DEVELOPMENT **9**

Performance Management Systems (PMS) - Training and Development Strategies - High-Potential Employee (HiPo) Identification - Coaching, Mentoring, and Career Planning - Employee Satisfaction and Well-being.

UNIT 5 TECHNOLOGY AND FUTURE TRENDS IN TALENT MANAGEMENT 9

HR Analytics in Talent Acquisition and Management - Role of AI and Automation in Hiring - Gig Economy and Contingent Workforce Management - Future Trends: Remote Work, Hybrid Models, and Digital Talent Pools - Ethical Considerations in AI-driven HR Practices.

TOTAL 45 HOURS

TEXTBOOKS

1. Dessler, G., & Varkkey, B. (2023). Human Resource Management (16th Edition). Pearson Education, India.

REFERENCE BOOKS

1. Armstrong, M., & Taylor, S. (2022). Armstrong's Handbook of Strategic Human Resource Management (7th Edition). Kogan Page, India.
2. Noe, R. A., Hollenbeck, J. R., Gerhart, B., & Wright, P. M. (2021). Fundamentals of Human Resource Management (8th Edition). McGraw Hill, India.
3. Phillips, J. M., & Gully, S. M. (2020). Strategic Staffing (3rd Edition). Pearson Education, India.
4. Sparrow, P., Hird, M., Balain, S., & Cooper, C. (2020). Strategic Talent Management: Contemporary Issues in International Contexts. Cambridge University Press, India.
5. Cappelli, P., & Keller, J. (2021). Talent Management: A Cross-Business Perspective. Oxford University Press, India.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3343	INDUSTRIAL RELATIONS AND LABOUR LAWS	3	0	0	3

LEARNING OUTCOMES

CO1	Explain the concept, significance, and evolution of industrial relations and identify the roles of various stakeholders, especially in the public sector.
CO2	Describe the historical development and legal provisions of trade unions and dispute resolution mechanisms and analyze the economic and social impact of industrial disputes.
CO3	Differentiate between statutory and voluntary welfare measures, and evaluate the contribution of labor welfare institutions like ILO and NCL.
CO4	Interpret the key provisions of major labor legislations concerning worker safety, employment conditions, and regulatory compliance.
CO5	Analyze the concept and components of social security and evaluate various social insurance and assistance schemes under current labor laws.

UNIT 1 INDUSTRIAL RELATIONS 8

An Overview, Concept – Importance & evolution – Industrial Relations problems in the Public Sector, Perspectives /Approaches to IR, Roles of major stakeholders of IR.

UNIT 2 INDUSTRIAL RELATIONS LEGISLATIONS 8

History and growth of Trade Unions – Trade Union Act, Industrial Employment & Standing Orders Act, Disputes – Causes, Industrial Dispute Act - Strikes – Industrial Peace Machinery – Conciliation – Mediation- Arbitration – Adjudication. Economic and Social Impact of Industrial disputes.

UNIT 3 LABOR WELFARE 9

Concept - Objectives – Scope– Need –Statutory Welfare Measures - Voluntary Welfare Measures – Labor – Welfare Funds – Workers Participation in Management (WPM) - Worker's Education and Training Schemes, Functioning and Objectives of ILO and National Commission on labor (NCL).

UNIT 4 LABOR LEGISLATIONS **10**

Factories Act, Workmen's Compensation Act, The Apprenticeship Act, Contract Labor (Regulation and Abolition) Act, Child Labor Act, Migrant Labor Act, IT Act and Cyber Laws, Shops and Establishments Act.

UNIT 5 SOCIAL SECURITY **10**

Concept, Importance, Social Insurance, Social Assistance, Social Security Legislations - Employees State Insurance Act, Provident Fund and Miscellaneous Act, Payment of Gratuity Act, The Maternity Benefit Act – Current trends in Labor Laws.

TOTAL 45 HOURS

TEXTBOOKS

1. P.R.N. Sinha, Indu Bala Sinha & Seema Priyadarshini Shekhar, "Industrial Relations, Trade Unions and Labour Legislation", Pearson Education India, 3rd Edition, 2017.

REFERENCE BOOKS

1. C.B. Mamoria, S. Mamoria & S.V. Gankar, "Dynamics of Industrial Relations", Himalaya Publishing House, 15th Revised Edition, 2020.
2. P.K. Padhi, "Labour and Industrial Laws", PHI Learning Pvt. Ltd., 3rd Edition, 2022.
3. S.C. Srivastava, "Industrial Relations and Labour Laws", Vikas Publishing House, 7th Edition, 2022.
4. H.L. Kumar, "Labour Laws: Everybody Should Know", Universal Law Publishing (an imprint of Lexis Nexis), 6th Edition, 2021
5. Dr. R.N. Chaudhary, "Employment Laws", Central Law Publications, Revised Edition, 2020.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3427	ORGANIZATION THEORY, STRUCTURE AND DESIGN	3	0	0	3

LEARNING OUTCOMES

CO1	Understand and explain the foundational concepts of organizational theory, design, and structure.
CO2	Analyze how various determinants (strategy, size, technology, environment, and power-control) influence organizational structures.
CO3	Evaluate different structural designs and organizational models, including Mintzberg's five structures, and their applications in different organizational contexts.
CO4	Apply organizational decision-making models and change management strategies to solve real-world organizational challenges.
CO5	Design and recommend suitable organizational structures and adaptive strategies for dynamic business environments.

UNIT 1 INTRODUCTION TO ORGANIZATION THEORY AND DESIGN 8

Organization, Contrasting Organization Theory and Organizational Behavior, Framework for analysing organization theory. Organizational Structure: Determinants and dimensions; Organization Design; Organization theory: Importance and Evolution; Organizational effectiveness: Four approaches.

UNIT 2 DETERMINANTS OF STRUCTURE 10

Strategy: Porter's strategy model and Miles and Snow's strategy typology. Size: Advantages and disadvantages of large organizational size. Technology: Woodward's model, Information Technology (IT) evolution, IT Impact on Organizational Design.Environment: Understanding organization's environment, Adapting to a changing environment, Organization-Environment Integrative framework. Power-Control: Logic of strategic choice, The case against strategic choice, Non rationality, The power-control model.

UNIT 3 STRUCTURAL DESIGN FOR ORGANIZATIONS 10

Information-Sharing Perspective on Structure, Organization design alternatives, Henry Mintzberg's five organizational structures (The Simple Structure, The Machine Bureacracy, The Professional Bureaucracy, The Divisional Structure, The Adhocracy), Functional, Divisional and Geographic Designs, Matrix Structure, Horizontal Structure, Virtual Networks and outsourcing, Hybrid Structure, Applications of Structural design, design essentials.

UNIT 4 MANAGING ORGANIZATIONAL PROCESSES AND CHANGE 9

Organizational decision making: Carnegie model, incremental decision model, Garbage can model, Contingency framework, Special decision circumstances; Managing organizational conflict and politics: Interdepartmental conflict in organizations, Political processes in organizations, Using soft power and politics; Managing organizational culture and values: Organization design and culture, Culture, learning and performance, Ethical values and social responsibility; Managing organizational change and innovation: The strategic role of change, elements for successful change, Strategies for implementing change, Innovation and competitive advantage.

UNIT 5 MANAGING ENVIRONMENT AND EVOLUTION 8

Managing the environment: Classifying strategies, internal strategies, external strategies, guidelines for managing the environment; Managing organizational evolution: Organizational life cycle, organizational decline, potential problems and solutions.

TOTAL 45 HOURS

TEXTBOOKS

1. Richard L. Daft, Understanding theory & Design of Organisations, 11th Edition Cengage, Indian, 2023.
2. Robbins Organization Theory; Structure Design & Applications, Prentice Hall of India, 2009.

REFERENCES BOOKS

1. Thomson G. Cummings and Christopher G. Worley, Organizational development and Change, 9th Edition, Cengage, 2011.
2. HBR and other Cases.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3428	MANAGERIAL AND BEHAVIOURAL ETHICS	3	0	0	3

LEARNING OUTCOMES

CO1	Describe the ethical theories and principles that guide decision-making in managerial contexts.
CO2	Recognize and address ethical challenges in corporate governance and managerial decision-making.
CO3	analyse the psychological and behavioural factors that influence ethical decision-making in business settings.
CO4	Examine ethical challenges across different functional areas of management and explore strategies for ethical business practices.
CO5	Equip students with the knowledge to integrate ethical considerations, sustainability, and CSR into business strategy and decision-making.

UNIT 1 INTRODUCTION TO ETHICS AND ETHICAL THEORIES 9

Meaning and Importance of Ethics in Business - Ethical Theories: Utilitarianism, Deontology, Virtue Ethics, and Justice Theory - Ethical Relativism vs. Ethical Absolutism - Moral Reasoning and Ethical Decision-Making Models - Corporate Social Responsibility (CSR) and Sustainability.

UNIT 2 MANAGERIAL ETHICS AND CORPORATE GOVERNANCE 9

Ethical Issues in Management: Workplace Ethics, Whistleblowing, and Conflict of Interest - Corporate Governance: Principles, Mechanisms, and Best Practices - Ethical Leadership and Corporate Culture - Case Studies on Corporate Governance Failures. and Lessons Learned.

UNIT 3 BEHAVIOURAL ETHICS AND DECISION-MAKING 9

Psychology of Ethical and Unethical Behaviour - Cognitive Biases in Ethical Decision-Making - Moral Disengagement and Justification of Unethical Actions - Organizational Influences on Ethical Behaviour - Case Studies on Ethical Decision-Making in Business.

UNIT 4 ETHICS IN FUNCTIONAL AREAS OF MANAGEMENT 9

Marketing Ethics: Consumer Rights, Deceptive Advertising, and Product Safety - Financial Ethics: Insider Trading, Fraud, and Ethical Investing - Human Resource Ethics: Workplace Diversity, Employee Rights, and Harassment - Ethical Issues in Operations and Supply Chain Management - Role of AI and Technology in Business Ethics

UNIT 5 ETHICS, SUSTAINABILITY, AND CORPORATE SOCIAL RESPONSIBILITY (CSR) 9

Ethics in Global Business: Cultural Sensitivity and International Business Norms - Environmental Ethics and Sustainable Business Practices - The Triple Bottom Line Approach: People, Planet, and Profit - Corporate Philanthropy and Socially Responsible Investments - Future Trends in Business Ethics and Sustainable Development Goals (SDGs).

TOTAL 45 HOURS

TEXTBOOKS

1. Business Ethics: Ethical Decision Making & Cases – O.C. Ferrell, John Fraedrich, and Linda Ferrell, 11th Edition, 2016, Cengage Learning.
2. Ethics in Management, Dr. K. Govinda Bhat, Prof. S.A. Sherlekar, Himalaya Publishing House, 2023.

REFERENCE BOOKS

1. Business Ethics and Corporate Governance – A.C. Fernando, 2nd Edition, 2012, Pearson India.
2. Ethical Management: Text and Cases in Business Ethics and Corporate Governance – Satish Modh, 1st Edition, 2005, McGraw Hill.
3. Business Ethics and Professional Values – A.B. Rao, 2nd Edition, 2006, Excel Books.
4. Corporate Governance: Principles, Policies and Practices – A.C. Fernando, 3rd Edition, 2012, Pearson India.
5. Management Ethics: Integrity at Work – Joseph A. Petrick and John F. Quinn, 1st Edition, 1997, SAGE Publications India.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3361	PROJECT MANAGEMENT	2	0	2	3

LEARNING OUTCOMES

CO1	Evaluate the basics of project management, including its lifecycle, environment, and the role of a project manager.
CO2	Assess project planning, budgeting, and risk management techniques.
CO3	Analyze scheduling methods, resource allocation, and project optimization.
CO4	Examine project organization, teamwork, and conflict management strategies.
CO5	Evaluate project control, performance monitoring, and completion processes.

UNIT 1 INTRODUCTION TO PROJECT MANAGEMENT 12

Definition, Goals, and Importance of Project Management - Project Life Cycles and Phases - Project Environments and Stakeholders - Role of a Project Manager – Responsibilities and Selection Criteria - Project Success and Failure Factors.

UNIT 2 PLANNING, BUDGETING, AND RISK MANAGEMENT 12

Project Planning Process and Work Breakdown Structure (WBS) - Cost Estimation and Budgeting – Methods and Techniques - Scheduling and Forecasting - Risk Management – Identification, Assessment, and Response Planning.

UNIT 3 SCHEDULING & RESOURCE ALLOCATION 12

Network Scheduling Techniques – PERT & CPM - Project Durations, Floats, and Critical Path Identification Project Crashing and Time-Cost Trade-offs - Resource Loading, Leveling, and Optimization - Simulation for Resource Allocation (Goldratt's Critical Chain Method).

UNIT 4 PROJECT ORGANIZATION & CONFLICT MANAGEMENT 12

Project Organizational Structures – Functional, Matrix, and Projectized - Project Team Formation and Development - Conflict in Project Management – Sources and Consequences - Managing Conflicts – Resolution Strategies and Team Collaboration.

UNIT 5 PROJECT CONTROL AND COMPLETION **12**

Project Control Process – Monitoring and Evaluation - Performance Measurement – Earned Value Management (EVM) - Internal and External Project Audits - Project Termination – Closure and Lessons Learned - Case Studies on Project Success and Failure

TOTAL 60 HOURS

REFERENCE BOOKS

1. John M. Nicholas, Project Management for Business and Technology - Principles and Practice, Second Edition, Pearson Education, 2006.
2. Clifford Gray and Erik Larson, Project Management, Tata McGraw Hill Edition, 2005.
3. Gido and Clements, Successful Project Management, Seventh Edition, Thomson Learning, 2017.
4. Samuel J.M., Jack R.M., Scott M.S., Margaret M.S., and Gopalan M.R., Project Management, First Indian edition, Wiley-India, 2006.
5. Harvey Maylor, Project Management, Third Edition, Pearson Education, 2006.
6. Panneerselvam. R, Senthilkumar. P, Project Management, PHI Learning, 2009.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3362	SUPPLY CHAIN AND LOGISTICS MANAGEMENT	2	0	2	3

LEARNING OUTCOMES

CO1	Evaluate the fundamental concepts of Supply Chain Management (SCM), its significance, and key performance metrics.
CO2	Assess demand forecasting and inventory management techniques to enhance supply chain efficiency.
CO3	Analyze logistics, warehousing, and transportation strategies for improving supply chain operations.
CO4	Evaluate sourcing, procurement, and production planning decisions for better supply chain coordination.
CO5	Assess modern technologies and sustainable practices for developing efficient supply chain strategies.

UNIT 1 INTRODUCTION TO SUPPLY CHAIN MANAGEMENT 12

Definition, Scope, and Importance of SCM - Key Supply Chain Drivers and Performance Metrics - Supply Chain Strategies and Competitive Advantage - Decision Phases in a Supply Chain - Case Studies on Supply Chain Success & Failures.

UNIT 2 DEMAND, SUPPLY, AND INVENTORY MANAGEMENT 12

Demand Forecasting Methods & Planning - Supply Chain Network Design and Coordination - Inventory Management: EOQ, Safety Stock, and Multi-echelon Inventory - The Bullwhip Effect and Its Mitigation Role of Aggregate Planning in SCM.

UNIT 3 LOGISTICS, WAREHOUSING, AND DISTRIBUTION 12

Role of Logistics in Supply Chain Performance - Warehousing: Functions, Layout, and Decision Models Distribution Network Design and Strategies - Transportation Planning and Cost Considerations - Multi- modal Logistics and Freight Consolidation.

UNIT 4 SUPPLY CHAIN PLANNING AND OPTIMIZATION 12

Sourcing and Procurement Strategies - Supplier Relationship Management (SRM) - Production Planning and Coordination in Supply Chains - Transportation and Network Optimization - Role of Information Technology in SCM.

UNIT 5 ADVANCED CONCEPTS AND FUTURE TRENDS 12

Sustainable and Green Supply Chains - Risk Management in Global Supply Chains - Role of Blockchain, AI, and IoT in SCM - Reverse Logistics and Closed-loop Supply Chains - Case Studies on Future Trends in SCM.

TOTAL 60 HOURS

REFERENCE BOOKS

1. Supply Chain Management: Strategy, Planning, and Operation (7th Edition), Sunil Chopra, Peter Meindl, Prentice Hall.
2. Integral Logistics Management: Operations and Supply Chain Management within and Across Companies, (4th Edition), Paul Schönsleben, CRC Press, Taylor & Francis Group.
3. Logistics & Supply Chain Management, (2022), Martin Christopher, Prentice Hall.
4. Business Logistics: Supply Chain Management (2007) L Ronald H. Ballou, Prentice Hall.
5. Introduction to Logistics Systems Management (2nd Edition): Gianpaolo Ghiani, Gilbert Laporte, Roberto Musmanno, Wiley.
6. Supply Chain and Logistics Management Made Easy: Methods and Applications for Planning, Operation, Integration, Control and Improvement, and Network Design (1st Edition): Paul A. Myerson, Pearson FT Press.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3344	SERVICES OPERATIONS MANAGEMENT	3	0	0	3

LEARNING OUTCOMES

CO1	Classify different types of services and explain their role in the economy.
CO2	Demonstrate service design concepts like blueprinting and process structures.
CO3	Analyze service quality using models and recommend improvements.
CO4	Examine service facility design and location strategies for better efficiency.
CO5	Apply demand and capacity management techniques to optimize services.

UNIT 1 INTRODUCTION TO SERVICE OPERATIONS 9

Nature and Role of Services - Service Classification & Characteristics - Service Strategy and Competitive Advantage - Technology in Services: Role of IT, impact on service innovation, digital transformation - Service Firm Competitiveness.

UNIT 2 SERVICE DESIGN & PROCESS STRUCTURE 9

New Service Development (NSD) - Service Blueprinting - Process Structure and Approaches - Retail Service Design and Network Configuration - Managing Service Experience.

UNIT 3 SERVICE QUALITY & PERFORMANCE 9

Understanding Service Quality - Measuring and Enhancing Service Quality - Service Guarantees and Profit Chain - Service Encounter Management.

UNIT 4 SERVICE FACILITY & LOCATION MANAGEMENT 9

Servicescape and Environmental Design - Facility Design and Process Analysis - Service Facility Layout and Location - Retail Outlet Location Strategies: Location Set Covering Problem, strategic retail positioning.

UNIT 5 MANAGING SERVICE CAPACITY, DEMAND & GROWTH 9

Forecasting and Managing Demand - Managing Service Capacity - Revenue and Yield Management - Queuing and Waiting Line Management - Scaling Up and Expanding Services.

TOTAL 45 HOURS

TEXTBOOKS

1. James A .Fitzsimmons, Service Management –Operations, Strategy, Information Technology, 8thEdition, Tata McGraw-Hill, 2013.

REFERENCE BOOKS

1. Richard Metters, Kathryn King-Metters, Madeleine Pullman, Steve Walton Successful Service Operations Management, South-Western, Cengage Learning, 2nd Edition ,2012
2. Cengiz Haksever, Barry Render, Roberta S. Russell, Rebert G. Murdick, Service Management and Operations, 2nd Edition, Pearson Education.
3. Robert Johnston, Graham Clark, Service Operations Management, 2nd Edition, Pearson Education, 2005.
4. Bill Hollins and Sadie Shinkins, Managing Service Operations, Sage, 2006.
5. J.Nevan Wright and Peter Race, The management of service operations, 2nd Edition, Cengage, 2004.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3345	OPERATIONS RESEARCH APPLICATIONS	3	0	0	3

LEARNING OUTCOMES

CO1	Identify different Operations Research (O.R.) tools used for solving real-world problems.
CO2	Use methods like dynamic programming and branch and bound to solve optimization problems.
CO3	Examine scheduling, vehicle routing, and resource allocation to improve efficiency.
CO4	Compare different models like bin packing and portfolio optimization for better decision-making.
CO5	Develop solutions for project scheduling, supply chain management, and workforce planning.

UNIT 1 OPTIMIZATION TECHNIQUES 9

Linear & Nonlinear Programming - Dynamic Programming: Principles, Applications, and Case Studies - Branch and Bound Method: Integer Programming and Combinatorial Optimization - Applications in Industry and Business

UNIT 2 SCHEDULING SYSTEMS AND APPLICATIONS 9

Single Machine Scheduling: Performance Measures & Sequencing Rules - Flow Shop Scheduling: Johnson's Rule, Heuristics - Job Shop Scheduling: Dispatching Rules, Gantt Charts, and Heuristic Approaches Applications in Manufacturing and Service Industries

UNIT 3 VEHICLE ROUTING AND LOGISTICS OPTIMIZATION 9

Vehicle Routing Problems (VRP): Types, Exact & Heuristic Approaches - Traveling Salesman Problem (TSP) and Its Variants - Applications in Supply Chain and Transportation Networks

UNIT 4 PROJECT SCHEDULING & RESOURCE OPTIMIZATION 9

Resource-Constrained Project Scheduling Problem (RCPSP) - Heuristic and Metaheuristic Approaches Time-Cost Trade-offs in Project Management - Applications in Construction & IT Project Planning

UNIT 5 SPECIALIZED O.R. APPLICATIONS IN DECISION-MAKING 9

Bin Packing Problems: Algorithms and Applications - Portfolio Optimization: Mean-Variance Analysis, Quadratic Programming - Staff Transfer Problem & Workforce Planning Models - Two-Stage Supply Chain Distribution Problem: Optimization Models

TOTAL 45 HOURS

REFERENCE BOOKS

1. Frederick S. Hillier, Gerald J. Lieberman. (2015). Introduction to Operations Research (10th Edition). : McGraw-Hill Education.
2. Taha, Hamdy A. (1997). Operation Research: An Introduction. 6th-ed. (6). Prentice-Hall.
3. Winston, W. L., & Goldberg, J. B. (2004). Operations research: Applications and algorithms (4th ed.). Thomson Brooks/Cole.

CO PO MAPPING

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CO1	3	2	1	1				2
CO2	3	2	1	2	2			2
CO3	3	3	2	2	2			2
CO4	3	3	3	2	1			2
CO5	3	3	3	2	2			2

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3346	OPERATIONS STRATEGY	3	0	0	3

LEARNING OUTCOMES

CO1	Explain the role of operations strategy in business competitiveness and industry dynamics.
CO2	Apply decision-making frameworks for facilities, capacity, technology, and supply chain strategies.
CO3	Demonstrate how cost, quality, flexibility, and innovation impact operational competitiveness.
CO4	Analyze the effects of outsourcing and globalization on strategic operations decisions.
CO5	Examine future trends like digital transformation, Industry 4.0, and sustainability in operations strategy.

UNIT 1 FOUNDATIONS OF OPERATIONS STRATEGY 9

Definition and Scope of Operations Strategy - Role of Operations in Business Strategy - Strategic Fit and Competitive Priorities - Value Chain and Competitive Advantage - Industry Clockspeed and Market Dynamics - Evolution of Operations: Cost-Centric to Strategic Focus - Impact of External Factors (Technology, Globalization, Customer Expectations).

UNIT 2 KEY DECISION AREAS IN OPERATIONS STRATEGY 9

Facilities and Capacity Planning - Process and Technology Strategy - Vertical Integration and Outsourcing Decisions - Supply Chain and Sourcing Strategies - Human Resource Considerations in Operations Strategy Organizational Structure and Alignment with Strategy - Trade-offs in Operations Decision Making.

UNIT 3 STRATEGIC APPROACHES TO OPERATIONS 9

Cost Leadership Strategy in Operations - Quality and Reliability as Competitive Strategies - Flexibility and Speed in Operations - Innovation and New Product Development Strategies - Sustainability and Green Operations - Trade-offs Between Cost, Quality, Speed, and Innovation -Case Studies of Successful Operations Strategies.

UNIT 4 OUTSOURCING AND GLOBALIZATION IN OPERATIONS STRATEGY 9

Strategic Implications of Outsourcing - Risks and Benefits of Global Sourcing - Offshoring, Nearshoring, and Reshoring Trends - Managing Global Supply Chains - Risk Management in International Operations Trade Policies and Regulatory Considerations – Balancing Cost Efficiency and Supply Chain Resilience.

UNIT 5 FUTURE OF OPERATIONS STRATEGY 9

Digital Transformation and Operations Strategy – Industry 4.0 and Smart Manufacturing – Artificial Intelligence and Data-Driven Decision Making – Circular Economy and Sustainable Operations – Agility and Resilience in Operations – Managing Disruptions and Uncertainty.

TOTAL 45 HOURS

REFERENCE BOOK

1. Beckman, Sara, and Donald Rosenfield. Operations Strategy: Competing in the 21st Century. McGraw-Hill/Irwin, 2007. ISBN: 9780072500783.
2. Fine, Charles H. Clock speed: Winning Industry Control in the Age of Temporary Advantage. Basic Books, 1999. ISBN: 9780738201535.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3347	SALES AND OPERATIONS PLANNING	3	0	0	3

LEARNING OUTCOMES

CO1	Explain the role of operations planning and demand forecasting in supply chain management.
CO2	Analyze capacity planning and aggregate operations planning strategies.
CO3	Apply MRP and MPS concepts for effective production planning.
CO4	Evaluate scheduling and distribution planning techniques for operational efficiency.
CO5	Develop ERP-based operations planning solutions using TOC insights.

UNIT 1 INTRODUCTION TO OPERATIONS PLANNING AND CONTROL 9

Need for operations planning and control - Objectives and scope of operations planning - Role of operations planning in supply chain management - Demand forecasting: techniques, methods, and applications - Forecasting accuracy and error measurement - Dovetailing demand forecasting with operations planning.

UNIT 2 CAPACITY AND AGGREGATE OPERATIONS PLANNING 9

Concepts of capacity planning - Types of capacity planning: Long-term, Medium-term, and Short-term Strategies for matching capacity with demand - Aggregate operations planning - Chase, Level, and Hybrid strategies for aggregate planning.

UNIT 3 MATERIAL REQUIREMENTS PLANNING (MRP) AND MASTER PRODUCTION SCHEDULE (MPS) 9

Introduction to Material Requirements Planning (MRP) - MRP inputs, processing, and outputs - Master Production Scheduling (MPS) and its link with MRP - Bill of Materials (BOM) and Inventory Management Lot-sizing techniques in MRP.

UNIT 4 OPERATIONS SCHEDULING AND DISTRIBUTION PLANNING 9

Operations scheduling: objectives and importance - Scheduling techniques for job shops and flow shops Role of distribution planning in supply chain efficiency - Distribution Resource Planning (DRP) and its integration with MRP - Inventory optimization in distribution networks.

UNIT 5 ENTERPRISE RESOURCE PLANNING (ERP) AND TOC PERSPECTIVES 9

Introduction to Enterprise Resource Planning (ERP) - ERP modules and implementation strategies - Theory of Constraints (TOC) in operations planning - TOC insights for scheduling and capacity management - Application of TOC for production and supply chain optimization.

TOTAL 45 HOURS

TEXTBOOK

1. Steven Nahmias, Tava Lennon Olsen, Production and Operations Analysis,Long Grove, Ill.: Waveland Press, 8th Edition.

REFERENCE BOOKS

1. Ajay K Garg, Production and Operations Management, McGraw Hill Education (India) Pvt. Ltd., 2012, Reprint 2017.
2. William J Stevenson, Operations Management, Twelfth Edition, McGraw Hill Education (India) Pvt. Ltd., 2017, Reprint 2018.
3. R. Panneerselvam, Production & operations management, Prentice Hall India private limited, 2017.
4. Aswathappa, K. Shridhara Bhat, K., Production and Operations Management, Himalaya Publishing House, 2014.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3348	DIGITAL INNOVATION AND TECHNOLOGY IN SCM	3	0	0	3

LEARNING OUTCOMES

CO1	Gain insights into digital supply chain transformation and the evolving role of stakeholders in a digital business landscape.
CO2	Analyze the impact of transformative technologies like Blockchain, IoT, AI, and Digital Twins on supply chain efficiency and agility.
CO3	Apply data-driven approaches to demand forecasting, Sales & Operations Planning (S&OP), and decision-making for a smarter supply chain.
CO4	Evaluate the role of digital platforms and omnichannel strategies in enhancing supply chain performance and competitiveness.
CO5	Develop a roadmap for successful supply chain digitization, incorporating change management, risk assessment, and future trends.

UNIT 1 INTRODUCTION TO DIGITAL SUPPLY CHAINS AND TRANSFORMATION 9

Evolution of Supply Chain Management - Concepts of Digital Transformation in Supply Chains -Stakeholder Perspectives in Digital Supply Chains - Digital Supply Chain Capabilities (Visibility, Agility, Collaboration, Omnichannel) - Impact of Industry 4.0 on Supply Chain Digitization - Challenges in Traditional vs. Digital Supply Chains.

UNIT 2 TRANSFORMATIVE TECHNOLOGIES IN DIGITAL SUPPLY CHAINS 9

Role of Technology in Supply Chain Transformation - Blockchain for Supply Chain Transparency and Security - Internet of Things (IoT) and Real-time Visibility - Artificial Intelligence (AI) and Machine Learning in Supply Chains - Digital Twins and Simulation for Decision-Making - Supply Chain 4.0: Automation and Smart Logistics.

UNIT 3 DEMAND PLANNING AND DATA INTEGRATION 9

Unified View of Demand Across the Supply Chain - Internal vs. External Data Integration - Demand Forecasting using AI and Big Data - Sales & Operations Planning (S&OP) in the Digital Era - Smart Execution and Control Tower for Supply Chains - Adaptive Supply Chain Strategies for Uncertain Environments.

UNIT 4 SUPPLY CHAIN DIGITIZATION AND PERFORMANCE ENHANCEMENT 9

Supply Chain Segmentation and Personalization - Impact of Digital Platforms on Supply Chain Performance E-Commerce and Omnichannel Supply Chains - Smart Contracts and Automated Supply Chain Transactions Case Studies of Digitally Transformed Supply Chains - Measuring the Long-Term Competitive Advantage of Digital Supply Chains.

UNIT 5 ROADMAP TO SUPPLY CHAIN DIGITIZATION AND CHANGE MANAGEMENT 9

Developing a Roadmap for Digital Supply Chain Transformation - Organizational Structure and Governance for Digital Supply Chains - Change Management in Supply Chain Digitization - Risk Management in Digital Supply Chain Adoption - Future Trends in Digital Supply Chains and Emerging Technologies -Final Case Studies and Industry Best Practices.

TOTAL 45 HOURS

REFERENCE BOOKS

1. Designing and Managing the Supply Chain: Concepts, Strategies and Case studies (4th Edition) by David Simchi Levi, Edith Simchi Levi, Ravi Shankar, Philip Kaminsky. McGraw Hill Education. Copyright © 2022.
2. MacCarthy, Bart L., and Dmitry Ivanov, eds. The digital supply chain. Elsevier, 2022.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3349	PROCUREMENT AND MATERIALS MANAGEMENT	3	0	0	3

LEARNING OUTCOMES

CO1	Explain the role of procurement in supply chain management and analyze how spend analysis helps in cost control.
CO2	Evaluate supplier performance and apply inventory control techniques to optimize procurement decisions.
CO3	Assess make-or-buy decisions, demonstrate effective negotiation skills, and develop material budgeting strategies.
CO4	Interpret legal aspects of procurement and apply the concept of Total Cost of Ownership (TCO) to cost management.
CO5	Analyze logistics and transportation costs to optimize procurement strategies for efficient supply chain management.

UNIT 1 FUNDAMENTALS OF PROCUREMENT AND SUPPLY MANAGEMENT 9

Role and Functions of Procurement in Supply Chain - Procurement Strategies and Objectives - Types of Procurement: Direct, Indirect, and Service Procurement - Spend Analysis and Cost Reduction Strategies Procurement Planning and Supplier Relationship Management (SRM).

UNIT 2 VENDOR DEVELOPMENT, RATING, AND INVENTORY CONTROL 9

Supplier Selection and Evaluation Criteria - Vendor Development and Rating Systems - Procurement Performance Metrics and Key Performance Indicators (KPIs) - Inventory Policy Control Systems: EOQ, JIT, VMI, ABC Analysis - Impact of Procurement Decisions on Inventory Management.

UNIT 3 STRATEGIC PROCUREMENT DECISIONS 9

Make or Buy Decisions: Framework and Analysis - Procurement Negotiations: Strategies and Techniques Material Costing Methods and Budgeting Approaches - Procurement of Spare Parts: Planning and Optimization - Risk Management in Procurement and Supplier Contracts.

UNIT 4 LEGAL ASPECTS IN PROCUREMENT AND TOTAL COST OF OWNERSHIP 9

Contract Management and Procurement Law - Key Legal Considerations in Procurement Transactions - Ethical and Sustainable Procurement Practices - Total Cost of Ownership (TCO): Concept and Applications Case Studies on Procurement Law and TCO Implementation.

UNIT 5 LOGISTICS AND TRANSPORTATION COST ANALYSIS 9

Logistics and Its Role in Procurement - Transportation Modes and Cost Analysis in Procurement - Impact of Freight and Shipping Costs on Procurement Decisions - Global Sourcing and Procurement Challenges Future Trends in Procurement and Digital Transformation.

TOTAL 45 HOURS

REFERENCE BOOKS

1. Purchasing and Supply Management: Text and Cases, (1996), Dobler DW, Burt, DN, Tata McGraw Hill, New Delhi.
2. Purchasing and Supply Chain. Management, 5e. Robert M. Monczka, Robert B.Handfield,. Larry C. Giunipero, James L. Patterson, Cengage Learning.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3351	MULTIMODAL TRANSPORTATION SYSTEM	3	0	0	3

LEARNING OUTCOMES

CO1	Describe the fundamental concepts, components, and benefits of multimodal transportation, and explain the role and responsibilities of multimodal transport operators.
CO2	Compare and analyze different modes of transport and intermodal systems, and evaluate their effectiveness in supply chain operations.
CO3	Apply knowledge of infrastructure and logistics facilities to optimize containerization, warehousing, and distribution processes.
CO4	Examine and interpret key policies and regulations related to multimodal transport, and assess their impact on logistics and trade.
CO5	Develop innovative strategies for integrating emerging technologies like AI, blockchain, and automation in multimodal logistics to improve efficiency and sustainability.

UNIT 1 INTRODUCTION TO MULTIMODAL TRANSPORTATION 9

Concept and components of multimodal transportation - Benefits of multimodal transport - Multimodal vs. intermodal transport - Multimodal transport operators: Roles, responsibilities, and liabilities - Challenges in multimodal transport - Technologies in multimodal transport.

UNIT 2 MODES OF TRANSPORT AND INTERMODAL SYSTEMS 9

Various modes of transport (road, rail, air, sea, inland waterways) - Intermodal systems: Road/rail/sea/air combinations - Inland container depots (ICD) and container freight stations (CFS) - Roll-on/Roll-off (RoRo) services - Development of multimodal transport in India: Metro Rails, LRT, Suburban Trains, Monorails, Bullet Trains.

UNIT 3 INFRASTRUCTURE AND LOGISTICS FACILITIES 9

City transport and economic corridors - Containerization vs. non-containerized cargo - Dry ports and pipelines - Palletization and cargo handling systems - Channel tunnels and inland waterway logistics.

UNIT 4 MULTIMODAL TRANSPORT POLICIES AND REGULATIONS 9

Multimodal Transport of Goods Act (1993) - Private Freight Terminals (PFT) Policy - Draft Coastal Shipping Policy and Cabotage Policy - Indian Railways container train movement policies - Foreign Direct Investment (FDI) reforms in logistics.

UNIT 5 EMERGING TRENDS IN MULTIMODAL LOGISTICS 9

AI and automation in multimodal transport - Blockchain and digital platforms for logistics visibility - Sustainable multimodal transport strategies - Smart logistics hubs and real-time tracking technologies - Future trends and innovations in multimodal logistics.

TOTAL 45 HOURS

REFERENCE BOOKS

1. Sinha, Deepankar, ed. "Global Supply Chains and Multimodal Logistics: Emerging Research and Opportunities: Emerging Research and Opportunities." (2019).
2. Logistics & Supply Chain Management, (2022), Martin Christopher, Prentice Hall.
3. Business Logistics: Supply Chain Management (2007) L Ronald H. Ballou, Prentice Hall.
4. Introduction to Logistics Systems Management (2nd Edition): Gianpaolo Ghiani, Gilbert Laporte, Roberto Musmanno, Wiley.
5. Supply Chain and Logistics Management Made Easy: Methods and Applications for Planning, Operation, Integration, Control and Improvement, and Network Design (1st Edition): Paul A. Myerson, Pearson FT Press.
6. Coyle J.J, Bardi E.W., Langley C.J., The Management of Business Logistics, A Supply Chain Perspective (2022), Thomson Asia.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3352	RETAIL AND E-COMMERCE SUPPLY CHAIN MANAGEMENT	3	0	0	3

LEARNING OUTCOMES

CO1	Describe the structure of retail and e-commerce supply chains and compare them with traditional supply chains.
CO2	Analyze vendor management strategies, apply sustainability practices, and evaluate inventory control techniques.
CO3	Develop effective order fulfillment strategies and propose solutions to last-mile delivery challenges.
CO4	Examine the role of emerging technologies like AI, IoT, and blockchain in supply chain operations and demonstrate their applications.
CO5	Assess regulatory and ethical considerations, identify risks, and predict future trends in retail and e-commerce supply chains.

UNIT 1 INTRODUCTION TO RETAIL AND E-COMMERCE SUPPLY CHAINS 9

Overview of Retail and E-commerce Supply Chain Landscape - Key Differences Between Traditional Retail and E-commerce Supply Chains - Challenges and Opportunities in Omnichannel Supply Chains - Facility Location and Layout Planning for Retail and E-commerce - Network Design for Omnichannel Operations.

UNIT 2 VENDOR MANAGEMENT, SUSTAINABILITY, AND INVENTORY CONTROL 9

Vendor Selection and Supplier Relationship Management - Sustainability and Green Supply Chain Practices in Retail - Demand Forecasting Techniques: Time Series Analysis, Machine Learning - Inventory Models and Optimization in E-commerce (JIT, Drop-shipping, Cross-docking) Warehousing and Distribution Center Management.

UNIT 3 ORDER FULFILLMENT AND LAST-MILE DELIVERY 9

Order Processing and Fulfillment Strategies - Robotics and Automation in Order Fulfillment - Last-Mile Delivery Challenges and Solutions - Reverse Logistics and Returns Management - Case Studies on Efficient Order Fulfillment in E-commerce.

UNIT 4 ROLE OF TECHNOLOGY IN RETAIL AND E-COMMERCE SUPPLY CHAINS 9

Role of Big Data and Predictive Analytics in Retail Supply Chains - IoT and RFID Applications in Supply Chain Visibility - Blockchain Technology for Supply Chain Transparency - E-commerce Platforms and Payment Systems - Enhancing Customer Experience Through Technology.

UNIT 5 COMPLIANCE, RISK MANAGEMENT, AND FUTURE TRENDS 9

Regulatory Compliance and Ethical Considerations in Retail and E-commerce - Risk Management in Global E-commerce Supply Chains - Impact of AI and Emerging Technologies on Supply Chain Strategy - Future Trends in Retail and E-commerce Supply Chain Management - Case Studies on Digital Transformation in Retail Supply Chains.

TOTAL 45 HOURS

REFERENCE BOOKS

1. Agrawal, Narendra, and Stephen A. Smith. Retail supply chain management. Springer, 2015.
2. Schniederjans, M. J., Cao, Q., & Triche, J. H. (2013). E-commerce operations management. World Scientific Publishing Company.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3463	SUPPLY CHAIN ANALYTICS	2	0	2	3

LEARNING OUTCOMES

CO1	Understand and use analytics to improve supply chain decisions.
CO2	Manage the Bullwhip effect and improve supply chain flow with better information.
CO3	Improve inventory and risk management to make the supply chain more flexible and resilient.
CO4	Use big data to enhance supply chain performance and manage demand and supply better.
CO5	Design and improve supply chain networks, including transportation and location decisions.

UNIT 1 INTRODUCTION TO SUPPLY CHAIN ANALYTICS 12

Overview of Supply Chain Analytics - Types of Analytics: Descriptive, Predictive, and Prescriptive Data- Driven Decision Making in Supply Chains - Tools and Techniques for Supply Chain Analytics.

UNIT 2 SUPPLY CHAIN INTEGRATION & RISK MANAGEMENT 12

Controlling the Bullwhip Effect - Value of Information Sharing - Supply Chain Integration Strategies, Risk Pooling & Risk Sharing Strategies - Inventory Management for Resiliency & Flexibility.

UNIT 3 TRANSPORTATION & NETWORK PLANNING 12

Transportation Decisions & Multi-Stage Transportation Problems - Fixed Charge Transportation Problem (FCTP) & Heuristic Solutions - Truck Allocation Problem: Integer Programming & Branch and Bound Algorithm - Network Planning and Optimization.

UNIT 4 DEMAND AND SUPPLY ANALYTICS 12

Forecasting Demand & Supply Variability - Push-Pull Strategies and Complexity Reduction - Demand- Supply Coordination - Supply Chain Segmentation Techniques.

UNIT 5 LOCATION AND NETWORK DESIGN MODELS 12

Key Factors in Location Decisions - Models for Discrete and Continuous Space Location Problems - Multi-Echelon and Single Product Location Allocation Models - Facility Layout Optimization (CRAFT Algorithm) Learned - Case Studies on Project Success and Failure.

TOTAL 60 HOURS

REFERENCE BOOKS

1. Tipi, N. (2021). Supply Chain Analytics and Modelling: Quantitative Tools and Applications. Kogan Page Publishers.
2. Simchi-Levi, D., Kaminsky, P., Simchi-Levi, E., & Shankar, R. (2008). Designing and Managing the Supply Chain: Concepts, Strategies and Case Studies. Tata McGraw-Hill Education.
3. Watson, Michael. (2013). Supply Chain Network Design: Applying Optimization and Analytics to the Global Supply Chain. Pearson Education.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3429	BEHAVIORAL OPERATIONS MANAGEMENT	3	0	0	3

LEARNING OUTCOMES

CO1	Recognize how human behavior affects decision-making in operations and supply chains.
CO2	Describe how motivation and emotions influence employee performance in workplaces.
CO3	Apply behavioral concepts to improve pricing strategies and revenue management.
CO4	Examine different ways to handle conflicts and negotiations in supply chain management.
CO5	Analyze how behavioral insights help in improving teamwork, innovation, and sustainability in operations.

UNIT 1 INTRODUCTION TO BEHAVIORAL OPERATIONS MANAGEMENT 9

Behavioral Foundations in Operations Management - Decision Making Under Uncertainty & Risk Human Judgment and Biases in Operational Settings - Psychological Perspectives on Supply Chain Management, Social and Cognitive Influences on Operations.

UNIT 2 BEHAVIORAL ASPECTS IN PROCESS AND PERFORMANCE MANAGEMENT 9

Motivation and Performance in Work Design - Intertemporal Choices in Project-Based Organizations Impulsiveness and Emotional Influence in Decision Making - Behavioral Factors in Process Optimization Human-Centered Design in Operations Management.

UNIT 3 REVENUE MANAGEMENT AND DYNAMIC PRICING STRATEGIES 9

Psychological Insights into Dynamic Pricing - Consumer Behavior and Pricing Perception - Fairness and Ethics in Pricing Decisions - Behavioral Aspects of Demand Forecasting - The Role of Nudges in Revenue Optimization.

UNIT 4 NEGOTIATION AND CONFLICT RESOLUTION IN SUPPLY CHAINS 9

Behavioral Aspects of Supply Chain Negotiation - Conflict Management in Operations - Decision-Making Styles in Negotiation - Trust and Reciprocity in Supply Chain Relationships - Game Theory and Behavioral Strategy in SCM.

UNIT 5 BEHAVIORAL INSIGHTS FOR CONTINUOUS IMPROVEMENT AND INNOVATION 9

Key Factors Overcoming Biases for Effective Decision Making - Behavioral Strategies for Lean and Agile Systems - Psychological Barriers to Change Management - Collaboration and Team Dynamics in Operations Behavioral Perspectives on Sustainability in Operations.

TOTAL 45 HOURS

REFERENCE BOOKS

1. Elliot Bendoly, Wout Van Wezel, and Daniel G. Bachrach, The Handbook of Behavioural Operations Management, Oxford University Press, 2015.
2. Lee J. Krajewski, Manoj K. Malhotra, and Larry P. Ritzman,Operations Management: Processes and Supply Chains, 11th Edition,Pearson Publication, 2015.
3. R. Dan Reid, and Nada R. Sanders,Operations Management, Binder Ready Version: An integrated Approach, 6th Edition, Wiley Binder Version, 2015
4. Jones, Nigel Slack, and Robert Johnston, Pearson Publication, Operations Management, 8th Edition, Alistair Brandon, 2016.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3431	WAREHOUSE AUTOMATION AND MANAGEMENT	3	0	0	3

LEARNING OUTCOMES

CO1	Describe the role of warehouses in the supply chain and classify different types of warehouses based on their functions.
CO2	Analyze warehouse layouts and operational processes to improve efficiency in material handling and order fulfillment.
CO3	Apply automation technologies such as robotics, AGVs, and AS/RS for optimizing warehouse storage and retrieval systems.
CO4	Evaluate warehouse performance using key metrics and develop cost management and safety strategies.
CO5	Design an efficient warehouse management system by integrating ICT tools, workforce planning, and best practices for world-class warehousing.

UNIT 1 INTRODUCTION TO WAREHOUSING AND ITS ROLE IN THE SUPPLY CHAIN 9

Definition and Importance of Warehousing - Role of Warehouses in the Supply Chain - Types of Warehouses (Public, Private, Bonded, Distribution Centers, etc.) - Key Functions of a Warehouse - Warehousing Trends and Challenges.

UNIT 2 WAREHOUSE LAYOUT, OPERATIONS, AND MATERIAL HANDLING 9

Warehouse Location Selection Factors - Warehouse Layout Design and Optimization - Receiving and Putaway Processes - Pallet Storage and Handling Systems - Case Picking Systems and Order Fulfillment Strategies - Material Handling Equipment (Forklifts, Conveyors, ASRS, etc.).

UNIT 3 WAREHOUSE AUTOMATION AND STORAGE & RETRIEVAL SYSTEMS 9

Need for Warehouse Automation - Automated Storage & Retrieval Systems (AS/RS) - Robotics, AGVs (Automated Guided Vehicles), and Drones in Warehousing - Sorters, Pick-to-Light & Put-to-Light Systems Kitting, Packaging, and Value-Added Services.

UNIT 4 WAREHOUSE PERFORMANCE, COST, AND SAFETY MANAGEMENT 9

Key Performance Indicators (KPIs) in Warehouse Management - Cost Reduction Strategies in Warehousing Warehouse Safety and Risk Management - Insurance Considerations in Warehousing - Inventory Accuracy and Control Systems.

UNIT 5 ICT, WORKFORCE MANAGEMENT, AND WORLD-CLASS WAREHOUSING PRACTICES 9

ICT in Warehouse Management (WMS, RFID, IoT, Blockchain) - Warehouse Workforce Planning and Development - Warehouse Maintenance Best Practices - The Seven Principles of World-Class Warehousing Emerging Trends in Warehousing and Logistics.

TOTAL 45 HOURS

REFERENCE BOOKS

1. Edward H. Frazelle, World-Class Warehousing and Material Handling (2nd edition), McGraw-Hill Publishers. ISBN: 978-0-07-178559-4.
2. Gwynne Richards, Warehouse Management: A complete guide to improving efficiency and minimizing costs in modern warehouses (2nd edition), Kogan Page Ltd, New Delhi. ISBN:978-0- 7494-6934-4.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3363	ARTIFICIAL INTELLIGENCE FOR BUSINESS	2	0	2	3

LEARNING OUTCOMES

CO1	Understand and explain the fundamental concepts, branches, and applications of Artificial Intelligence across various business functions.
CO2	Apply machine learning algorithms such as Linear Regression, KNN, Decision Trees, and Random Forest to solve business problems using appropriate tools.
CO3	Analyze and implement clustering methods and recommendation systems for personalized business applications using relevant techniques.
CO4	Build and evaluate deep learning models using neural network architectures and frameworks like TensorFlow and PyTorch for business-specific applications.
CO5	Evaluate and implement generative AI applications using techniques like GANs and LLMs, considering ethical implications and business impact.

UNIT 1 INTRODUCTION TO ARTIFICIAL INTELLIGENCE 12

Basic Concepts of Artificial Intelligence – Branches of AI – Machine Learning – Deep Learning – Natural language Processing – Robotics Expert Systems – Vision – Benefits and Risks of AI – Applications of AI – Benefits and Risks of AI – Application of AI in Business – AI in Marketing, Finance, Operations and HR.

UNIT 2 MACHINE LEARNING 12

Overview of Machine Learning – Types of Machine Learning – Supervised Learning – Unsupervised Learning – Reinforcement Learning – Machine Learning Framework – Challenges of ML – Role of Statistics in ML - Learning Algorithms and its Applications in Business – Linear Regression – KNN– Decision Trees - Ensemble Learning – Random Forest Build ML applications using relevant tools and techniques.

UNIT 3 CLUSTERING AND RECOMMENDATION ENGINES 12

Clustering Techniques – K-Means – Clustering Applications in Business – Recommendation Engine – Recommendation System Techniques – Content Based Recommendations – Collaborative Recommendations – Applications of Recommendation Engines in Business- Build ML applications using relevant tools and techniques.

UNIT 4 DEEP LEARNING **12**

Overview of Deep Learning – Difference between ML and Deep Learning – Neural Networks and their Architectures – Feedforward Neural Networks – Convolutional Neural Networks (CNNs) – Recurrent Neural Networks (RNNs) – Transformers – Deep Learning for Computer Vision (Image Classification, Object Detection, Image Segmentation) – Deep Learning for Speech Learning (Speech Recognition, Text-to-Speech, Speaker Identification) – Deep Learning Frameworks (TensorFlow, PyTorch) – Optimization Techniques – Hyperparameter Tuning – Challenges in Deep Learning – Applications of Deep Learning in Business – Implementing Deep Learning Models using relevant tools and techniques.

UNIT 5 GENERATIVE AI **12**

Overview of Generative AI – Generative vs Discriminative Models – Tokenization Embeddings - Autoencoders – Generative Adversarial Networks (GANs) - Large Language Models (LLMs) – Prompt Engineering – Fine-Tuning Pre-trained Models – Ethical Considerations in Generative AI – Role of Generative AI in Business and Creativity – Case Studies of AI-Generated Content – Implementing Generative AI Applications using relevant tools and techniques.

TOTAL 60 HOURS

REFERENCE BOOKS

1. Rajendra Akerkar, Artificial Intelligence for Business, Springer, 2019.
2. Stuart Russell and Peter Norvig, Artificial Intelligence: A Modern Approach, 4th edition, Pearson Publications, 2020.
3. Aurélien Géron, Hands on Machine Learning with Scikit-Learn, Keras and TensorFlow: Concepts, Tools and Techniques to Build Intelligent Systems, O'Reilly, 2022.
4. Andreas C. Müller & Sarah Guido, Introduction to Machine Learning with Python: A Guide for Data Scientists, O'Reilly, 2016.
5. Steven Finlay, Artificial Intelligence and Machine Learning for Business: A No-Nonsense Guide to Data Driven Technologies, 3rd Edition, Relativistic, 2019.
6. Sandeep Kumar Panda, Vaibhav Mishra, R. Balamurali and Ahmed A.Elngar, Artificial Intelligence and Machine Learning in Business Management: Concepts, Challenges and Case Studies, CRC Press, 2024.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3353	FUNCTIONAL ANALYTICS	3	0	0	3

LEARNING OUTCOMES

CO1	Apply appropriate analytical methods to solve business problems in Marketing.
CO2	Apply appropriate analytical methods to solve business problems in Finance
CO3	Apply appropriate analytical methods to solve business problems in Operations
CO4	Apply appropriate analytical methods to solve business problems in HR
CO5	Demonstrate knowledge and critical understanding of analytics in different domains

UNIT 1 ANALYTICS IN MARKETING **9**

Basics of Marketing Management - Key Performance Indicators/Drivers -Baseline and Benchmark KPI's - KPI Tree for Marketing - Marketing Dashboards - Application of Analytics in Marketing- Applications of AI and Gen AI in marketing.

UNIT 2 ANALYTICS IN FINANCE **9**

Basics of Financial Management - Key Performance Indicators/Drivers of Finance function, Baseline and Benchmark KPI's -KPI Tree for Finance - Finance Dashboards - Application of Analytics in Finance- Applications of AI and Gen AI in Finance.

UNIT 3 ANALYTICS IN OPERATIONS **9**

Basics of Operations Management - Inventory Control - Logistics and Supply Chain - KPI Tree for Operations - Operations Dashboard - Using analytics in Manufacturing and Service Operations - Preventive Maintenance in Manufacturing – Forecasting and Supply Chain Analytics- Applications of AI and Gen AI in Operations.

UNIT 4 ANALYTICS IN HR **8**

Basics of HR Management - Key Performance Indicators/Drivers of HR function, Baseline and Benchmark KPI's - KPI Tree for HR - HR Dashboards- Application of Analytics in HR- Applications of AI and Gen AI in HR

UNIT 5 APPLICATION OF ANALYTICS IN DOMAINS **10**

Use of Analytics in different domains such as Healthcare, Entertainment, Telecommunication, IT /ITES, Hospitality, E-Commerce, Retail, Manufacturing, Banking and Financial Services Industry.

TOTAL 45 HOURS

REFERENCE BOOKS

1. Marketing Analytics: A Practical Guide to Improving Consumer Insights Using Data Techniques, Mike Grigsby,Kogan Page, 2nd Edition,2018.
2. Ramashankar Yadav, Sunil Maheswari , HR Analytics: Connecting Data and Theory, Wiley 2020.
3. R.K.Arora, Financial Risk Analytics: Measurement, Management and Examples in R, Wiley, 2022.
4. Pitabas Mohanty, Financial Analytics, Wiley, 2023.
5. Gerardus Blokdyk, Operational Analytics, Second edition, 5STAR Cooks, 2019.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3354	DIGITAL TRANSFORMATION FOR ORGANIZATIONAL GROWTH	3	0	0	3

LEARNING OUTCOMES

CO1	Apply the principles of digital transformation concepts to business scenarios.
CO2	Analyze case studies to understand how organizations have used digital transformation for non-linear growth.
CO3	Integrate various digital technologies to devise a comprehensive solution for driving non-linear growth
CO4	Critically assess the potential impact of proposed digital transformation strategies

UNIT 1 INTRODUCTION TO DIGITAL TRANSFORMATION **8**

Digital Transformation – Role of Digital Transformation in Business Growth – Digital Implementation Methodology – Emerging Technologies – Emerging Digital Themes by Industry.

UNIT 2 DIGITAL TRANSFORMATION METHODS **8**

Digital Transformation Lifecycle – Design Thinking – Clayton Christensen's Disruptive Innovation Framework – Social Technologies – Applying Digital Matrix – Cloud Computing – Collision at the Core, Reinvention at the Root.

UNIT 3 INTELLIGENT TECHNOLOGIES **9**

Robotic Process Automation – Internet of Things – Edge Computing – Artificial Intelligence – Potential AI opportunities – Blockchain – Drones – Virtual and Augmented Reality – 3D Printing – Use Cases.

UNIT 4 APPLICATIONS OF DIGITAL TECHNOLOGIES IN BUSINESS **9**

Creating Data savvy organization using Analytics – Driving Intelligent Automation – Case Studies of Successful Digital Transformation – Driving Non-Linear Growth using Digital Technologies.

UNIT 5 DIGITAL TRANSFORMATION STRATEGIES AND ROADMAP 8

Identifying opportunities for Digital Transformation – Devising a strategy & roadmap for implementing digital technologies.

TOTAL 45 HOURS

REFERENCE BOOKS

1. Anup Maheshwari, Digital Transformation: Building Intelligent Enterprises, Wiley, 2019.
2. David L. Rogers, The Digital Transformation Roadmap, Columbia University Press, 2023.
3. Venkat Venkatraman, The Digital Matrix: New Rules for Business Transformation Through Technology, 1st Edition, Penguin, 2017.
4. Raktim Sing, Driving Digital Transformation: Reshape the Future of Your Business, 9th Edition, Pendown Press, 2020.
5. Siu Loon Hoe, Digital Transformation: Strategy, Execution and Technology, CRC Press, 2022.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3364	TOOLS FOR BUSINESS ANALYTICS	2	0	2	3

LEARNING OUTCOMES

CO1	Apply business analytics tools effectively in real-world scenarios.
CO2	Apply core Python libraries for data manipulation and analysis.
CO3	Apply Exploratory Data Analysis (EDA) techniques to prepare data for analysis.
CO4	Evaluate and justify the creation of effective data visualizations and dashboards.
CO5	Evaluate the performance and effectiveness of machine learning models for predictive analytics.

UNIT 1 OVERVIEW OF BUSINESS ANALYTICS TOOLS 8

Introduction to Business Analytics Tools – Categories of Analytics Tools – Comparative Analysis – Strengths and Limitations. Getting Started with Python – Installation of Python and Setting Up the Development Environment – Introduction to Python Environment – Defining Functions – Operators in Python – Data Types and Their Applications – Essential Data Structures – Conditional Execution – Iterative Statements.

UNIT 2 CORE PYTHON LIBRARIES FOR BUSINESS ANALYTICS 10

Overview of NumPy – Fundamentals of pandas – Working with Series and Data frames – Indexing and Reindexing Techniques – Data Selection and Sub setting – Filtering and Sorting Data – Identifying Unique Values – Counting Value Occurrences – Data Import and Storage Options – Introduction to Data Frames Optimization.

UNIT 3 EXPLORATORY DATA ANALYSIS USING PYTHON 12

Introduction to EDA – Importance and Process of EDA – Data Cleaning Techniques – Handling Missig Data – Methods for Replacing Values – Deduplication Strategies – Outlier Detection and Treatment – Feature Scaling and Normalization – Encoding Categorical Variables – Data Transformation – Data Merging and Joining – Implementing Pivot Tables – Grouping and Aggregating Data – Introduction to Feature Engineering.

UNIT 4 DATA VISUALIZATION USING PYTHON 10

Introduction to Data Visualization – Types of Visualizations and Their Applications – Overview of Visualization Libraries – Introduction to Matplotlib – Understanding and Implementing Plotting Functions – Creating Visualizations with Seaborn – Box Plots and Histograms – Count Plots and Pie Charts – Violin and Line Plots – Scatter Plots and Pairwise Analysis – Facet Grids for Multi- Plot Visualizations – Creating Heatmaps – Interactive Visualizations using Plotly – Building Dashboards for Business Insights.

UNIT 5 MACHINE LEARNING MODELING WITH PYTHON 20

Introduction to SciPy for Statistical Computing – Understanding Clustering Techniques – Overview of stats models for Statistical Analysis – Implementing Linear Regression – Introduction to scikit-learn Library – Logistic Regression and Its Applications – Evaluating Model Performance – Introduction to Decision Trees – Cross-Validation Techniques for Model Assessment

TOTAL 60 HOURS

REFERENCE BOOKS

1. Umesh R. Hodeghatta and Umesha Nayak, Practical Business Analytics Using R and Python: Solve Business Problems Using a Data-driven Approach Apress,2023.
2. Galit Shmueli; Peter C. Bruce; Peter Gedeck; Nitin R. Patel; O.P. Wali, Data Mining for Business Analytics, (An Indian Adaptation): Concepts, Techniques and Applications in Python, Wiley, 2023.
3. George Snypes, Python Data Wrangling for Business Analytics, Fiel LLC, 2024.
4. Bharti Motwani, Data Analytics using Python, Wiley, 2020.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3355	BUSINESS INTELLIGENCE THROUGH DATA ENGINEERING	3	0	0	3

LEARNING OUTCOMES

CO1	Explain the fundamental concepts of Business Intelligence, enterprise data strategy, and data governance.
CO2	Describe the role of data engineering, ETL/ELT processes, and data integration techniques in business intelligence.
CO3	Analyze different data storage architectures, including data warehouses, data lakes, and cloud-based platforms, and their impact on business intelligence.
CO4	Evaluate the challenges of legacy data systems and assess strategies for data modernization and real-time data processing in business transformation.
CO5	Examine case studies of data-driven enterprises to assess the impact of data strategy, AI, and machine learning on business intelligence and decision-making.

UNIT 1 FOUNDATIONS OF BUSINESS INTELLIGENCE & ENTERPRISE DATA STRATEGY 8

DIKW Pyramid – Types of Data – Why Data is the New Oil: The Role of BI in Business – Evolution of Business Intelligence: From Legacy BI to Modern BI – Key Components of Enterprise Data Strategy – Data Governance & Compliance (GDPR, Data Security, and Ethics).

UNIT 2 DATA ENGINEERING & INTEGRATION FOR BUSINESS INTELLIGENCE 8

What is Data Engineering? (And Why Business Leaders Should Care) – ETL vs. ELT: The Modern Approach to Data Integration – ETL Pipelines & Data Workflow Automation – Data Integration & APIs: Connecting Different Business Systems – Enterprise Data Architecture.

UNIT 3 DATA STORAGE & CLOUD SOLUTIONS FOR BI 10

Data Warehouse vs. Data Lake vs. Lakehouse – Data Marts and Their Role in BI -Use Cases of Data Lakes in Business (Marketing, Finance, Supply Chain) – The Rise of the Lakehouse Architecture – Cloud Data Platforms: AWS, Azure, Google Cloud – Traditional Data Storage vs. Modern Data Platforms.

UNIT 4 DATA MODERNIZATION & BUSINESS TRANSFORMATION 9

Challenges of Legacy Data Systems – Cloud-Based vs. On-Premises Data Management – The Shift from Batch Processing to Real-Time Data – Understanding Data Maturity Levels (Reactive → Predictive → Prescriptive) – How Companies Scale Their Data Capabilities.

UNIT 5 DATA STRATEGY, AI, & THE FUTURE OF BUSINESS INTELLIGENCE 10

Case Studies of Data-Driven Enterprises (Amazon, Netflix, Unilever) – Building a Data Culture in Organizations – Aligning Data Strategy with Business Objectives – Data Monetization: How Companies Generate Revenue from Data – Role of AI & Machine Learning in Business Intelligence – The Future: Automated Decision-Making & Data-Driven Leadership.

TOTAL 45 HOURS

REFERENCE BOOKS

1. Joe Reis and Matt Housley, Business Intelligence: The Ultimate Guide to BI, Artificial Intelligence, Machine Learning, Big Data, Cybersecurity, Data Science, and Predictive Analytics , June 2022, O REilly Media, Inc.
2. Dr. Naveen Kumar Singh and Shanu Gupta Business Intelligence and Analytics, September 2024 by Dr. Naveen Kumar Singh (Author), Shanu Gupta (Author). SK Kataria & Sons.
3. Tobias Zwingmann , AI-Powered Business Intelligence: Improving Forecasts and Decision Making with Machine Learning (Grayscale Indian Edition), June 2022, Shroff/O'Reilly.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3432	BIG DATA ANALYTICS	3	0	0	3

LEARNING OUTCOMES

CO1	Describe the fundamental concepts of Big Data, its characteristics, challenges, and its impact on business transformation.
CO2	Utilize Hadoop ecosystem tools and frameworks to collect, process, and manage Big Data efficiently.
CO3	Apply data analytics techniques to clean, transform, and analyze Big Data for insightful decision-making.
CO4	Evaluate real-world applications of Big Data across industries and propose innovative solutions for business improvements.
CO5	Assess security and privacy concerns in Big Data and recommend appropriate governance frameworks and protective measures.

UNIT 1 INTRODUCTION TO BIG DATA **8**

Introduction to Big Data Analytics – Types of Data - Characteristics of Big Data – Traditional vs Big Data Business Approach - Big Data and Business Transformation – Challenges in Big Data.

UNIT 2 HADOOP ECOSYSTEM **10**

Techniques and Procedures for Data Gathering, Processing, and Analysis - Big Data Platforms - Hadoop Architecture - HDFS and MapReduce - HIVE and DRILL - MAHOUT and SPARK MLlib - PIG and HIVE Framework - HBASE, ZOOKEEPER and AMBARI - SPARK - KAFKA, and STORM - OOZIE and YARN - Flume and Sqoop - Streaming Data.

UNIT 3 BIG DATA ANALYTICS **9**

Types of Big Data Problems - Data Analytics Life Cycle – Data Cleaning – Data Transformation – Descriptive Analytics – Predictive Analytics – Data Mining - Real-Time Stream Analysis - Analytic Techniques and Tools used in Big Data Visualization – Big Data Architectures – Lambda and Kappa.

UNIT 4 BIG DATA APPLICATIONS **10**

Big Data Use Cases in Various Domains - Applications in Marketing, Finance, Operations, and Human Resources - Proof of Concept (POC) - Testing and Evaluation - Social Media and Web Analytics - Sentiment Analysis - Stock Market Predictions - Text Mining - Industry-Specific Big Data Applications.

UNIT 5 SECURITY AND PRIVACY FOR BIG DATA ANALYTICS **8**

Security and Privacy Challenges in Big Data - Data Sharing and Privacy Concerns - Privacy-Preserving Methods - Authentication and Encryption Protocols - Access Control Mechanisms - Data Usage Agreement Policies - Big Data Governance Framework.

TOTAL 45 HOURS

REFERENCE BOOKS

1. Nathan Marz & James Warren, Big Data: Principles and Best Practices of Scalable Real-Time Data Systems, Manning Publications.
2. Tom White, Hadoop: The Definitive Guide, O'Reilly Media, 4th Edition.
3. Foster Provost & Tom Fawcett, Data Science for Business: What You Need to Know About Data Mining and Data-Analytic Thinking, O'Reilly Media.

CO PO MAPPING

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

COURSE CODE	COURSE TITLE	L	T	P	C
PBA3433	BLOCK CHAIN TECHNOLOGY FOR BUSINESS DECISIONS	3	0	0	3

LEARNING OUTCOMES

CO1	To get an idea about the history of Blockchain.
CO2	Understand key features, different types of platforms & languages of blockchain technology.
CO3	Students will be familiar with cryptocurrency concepts.
CO4	Understand the design principles of ethereum.
CO5	Learn about hyperledger fabric models and its architecture.

UNIT 1 INTRODUCTION **9**

Distributed Database, Two General Problem, Byzantine General problem and Fault Tolerance, Hadoop Distributed File System, Distributed Hash Table, ASIC resistance, Turing Complete. Cryptography: Hash function, Digital Signature - ECDSA, Memory Hard Algorithm, Zero Knowledge Proof.

UNIT -2 BLOCKCHAIN & APPLICATIONS **9**

Introduction to Blockchain, Gartner's Hype Curve and Evolution of Blockchain Technology, Blockchain Need & Genesis, Key Characteristics of Blockchain, Blockchain Structure, Blockchain types and Network, Mining and Consensus, How Blockchain Works, Bitcoin Whitepaper, Understanding Bitcoin, Components of a Block, Forks: soft & hard forks, Ummer blocks, Different forks from Bitcoin, Wallets, Transactions, Public & Private keys, Blockchain Applications : Internet of Things, Medical Record Management System, Do- main Name Service and future of Blockchain.

UNIT 3 CRYPTOCURRENCY **9**

History, Distributed Ledger, Bitcoin protocols - Mining strategy and rewards, Ethereum - Construction, DAO, Smart Contract, GHOST, Vulnerability, Attacks, Sidechain, Namecoin. Cryptocurrency Regulation: Stakeholders, Roots of Bitcoin, Legal Aspects – Cryptocurrency Exchange, Black Market and Global Economy.

UNIT 4 ETHEREU **9**

Need of Ethereum, Ethereum Foundation, Ethereum Whitepaper, How Ethereum Works, Ethereum network, Ethereum Virtual Machine, Transactions and Types, Mining & Consensus, Smart Contracts.

UNIT 5 HYPERLEDGER FABRIC **9**

Hyperledger, Hyperledger Fabric, Comparison between Fabric & Other Technologies, Fabric Architecture, Components of Hyperledger Fabric, Advantages of Hyperledger Fabric Blockchain, How Hyperledger Fabric Works.

TOTAL 45 HOURS

REFERENCE BOOKS

1. Imran Bashir, Mastering Blockchain, Packt Publishing, March 2017.
2. Debajani Mohanty, Block Chain : From Concept to Execution, BPB Publications, 2nd edition, 2018.
3. Artemis Caro, Blockchain: Bitcoin, Ethereum & Blockchain: The Beginners Guide to Understanding the Technology Behind Bitcoin & Cryptocurrency, 2017.
4. Andreas M. Antonopoulos, Gavin Wood, Mastering Ethereum: Building Smart Contracts and DApps, O'REILLY, 2018.

CO PO MAPPING

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CO1	3	2	2	3			1	3
CO2	3	1	2				1	3
CO3	3	2	3				1	3
CO4	3	1	2	2			1	3
CO5	3	2	2	2			1	3