



ANNA UNIVERSITY, CHENNAI

POSTGRADUATE CURRICULUM (NON-AUTONOMOUS AFFILIATED INSTITUTIONS)

Programme: Master of Business Administration (Artificial Intelligence and Data Science)

Regulations: 2025

Abbreviations:

BS – Basic Science (Mathematics, Physics, Chemistry)

L – Laboratory Course

ES – Engineering Science (General (**G**), Programme Core (**PC**), Programme Elective (**PE**))

T – Theory

SD – Skill Development

LIT – Laboratory Integrated Theory

SL – Self Learning

PW – Project Work

OE – Open Elective

TCP – Total Contact Period(s)

Semester I

S. No.	Course Code	Course Title	Type	Periods per week			Total Contact Periods	Credits	Category
				L	T	P			
1.	MB25C02	Management Concepts and Organizational Behavior	T	4	0	0	4	4	ES (PC)
2.	MB25C03	Managerial Economics	T	4	0	0	4	4	ES (PC)
3.	MB25C01	Statistics for Management	T	3	1	0	4	4	ES (PC)
4.	MB25C04	Legal Aspects of Business	T	4	0	0	4	4	ES (PC)
5.	BN25C01	Managerial Decision Science	T	4	0	0	4	4	ES (PC)
6.	BN25C02	Data Management and Data Engineering	T	4	0	0	4	4	ES (PC)
7.	BN25C03	Financial Accounting and Management	T	3	1	0	4	4	ES (PC)
8.	MB25C05	Contemporary Business Communication	L	0	0	4	4	2	--
9.	BN25C04	Data Science Tools -I	L	0	0	4	4	2	--
Total Credits							36	32	

Semester II

S. No.	Course Code	Course Title	Type	Periods per week			Total Contact Periods	Credits	Category
				L	T	P			
1.	MB25C09	Human Resource Management	T	4	0	0	4	4	ES (PC)
2.	MB25C10	Marketing Management	T	4	0	0	4	4	ES (PC)
3.	MB25C11	Operations Management	T	3	1	0	4	4	ES (PC)
4.	BN25C05	Predictive Modeling for Business	T	4	0	0	4	4	ES (PC)
5	MB25C08	Business Research Methods	T	3	1	0	4	4	ES (PC)
6.	MB25C07	Applied Operations Research	T	3	1	0	4	4	ES (PC)
7.	MB25C06	Entrepreneurship Development	T	3	0	0	3	3	ES (PC)
8.	BN25C06	Data Science Tools - II	L	0	0	4	4	2	--
9.	BN25C07	Social Media Content Creation	L	0	0	4	4	2	--
Total Credits							35	31	

Semester – III

S. No.	Course Code	Course Title	Type	Periods per week			Total Contact Periods	Credits	Category
				L	T	P			
1.	BS25301	Introduction to Artificial Intelligence	T	4	0	0	4	4	ES (PC)
2.	BS25302	Fundamentals of Data Science	T	4	0	0	4	4	ES (PC)
3.	---	Programme Elective I	T	3	0	0	3	3	ES (PE)
4.	---	Programme Elective II	T	3	0	0	3	3	ES (PE)
5	---	Programme Elective III	T	3	0	0	3	3	ES (PE)
6.	---	Programme Elective IV	T	3	0	0	3	3	ES (PE)
7.	---	Programme Elective V	T	3	0	0	3	3	ES (PE)
	---	Programme Elective VI	T	3	0	0	3	3	ES (PE)
8.	BS25303	World of AI	L	0	0	4	4	2	--
9.	BS25304	Mini project	L	0	0	4	4	2	SD
Total Credits							34	30	

Semester IV

S. No.	Course Code	Course Title	Type	Periods per week			Total Contact Periods	Credits	Category
				L	T	P			
1.	BS25401	Project Work	PW	0	0	24	24	12	SD
Total Credits							24	12	

Note: Students should select the Project topic for their project work only based on the selected area from the Programme Electives (**Specialization**).

TOTAL : 105 CREDITS

Note:

* Refer MBA - General Programme

**Refer MBA - Business Analytics

Programme Elective Courses – (PEC)

Students can take six elective subjects:

S. No.	Course Code	Course Title	Type	Periods Per Week			Total Contact Periods	Credits	Category
				L	T	P			
1.	BS25001	Advanced Machine Learning	T	3	0	0	3	3	ES (PE)
2.	MB25C13	Deep Learning	T	3	0	0	3	3	ES (PE)
3.	BN25C08	Natural Language Processing	T	3	0	0	3	3	ES (PE)
4.	BS25002	Generative AI for Business	T	3	0	0	3	3	ES (PE)
5.	BS25003	Business Intelligence	T	3	0	0	3	3	ES (PE)
6.	BS25004	Big Data Management and Security	T	3	0	0	3	3	ES (PE)
7.	BS25005	Analytics toolkit for Decision Sciences	T	3	0	0	3	3	ES (PE)
8.	BS25006	Artificial Intelligence & its applications	T	3	0	0	3	3	ES (PE)
9.	BS25007	Natural Language Processing with LLM	T	3	0	0	3	3	ES (PE)
10.	BS25008	Data Visualization	T	3	0	0	3	3	ES (PE)
11.	BS25009	Artificial Neural Networks	T	3	0	0	3	3	ES (PE)
12.	BS25010	Machine Learning and Predictive Modelling	T	3	0	0	3	3	ES (PE)

MB25C02	Management Concepts and Organizational Behavior	L	T	P	C
		4	0	0	4
<p>Course Objectives: This course aims to provides foundational understanding of management principles and organizational behavior. It equips them to analyze individual and group dynamics, and apply management theories to real-world business problems.</p>					
<p>Fundamentals of Management and Evolutionary Theories: Evolution of management Thought-Classical, Behavioral and Management Science Approaches Management-meaning, levels, management as an art or science, Managerial functions and Roles, Evolution of Management Theory- Classical era- Contribution of F.W.Taylor, Henri Fayol, NeoClassical-Mayo & Hawthorne Experiments. Modern era, system & contingency approach Managerial Skills..</p>					
<p>Planning, Decision-Making and Organizing for Effectiveness: Planning - Steps in Planning Process - Scope and Limitations - Forecasting and types of Planning - Characteristics of a sound Plan - Management by OBJECTIVE (MBO) - PoliciesandStrategiesScopeandFormulation-DecisionMaking-Types,Techniques and Processes. Organisation Structure and Design - Authority and Responsibility Relationships - Delegation of Authority and Decentralisation -Interdepartmental Coordination - - Impact of Technology on Organisational design - Mechanistic vs Adoptive Structures - Formal and Informal Organisation. Control: meaning, function, Process and types of Control.</p>					
<p>Fundamentals of Control and Modern Approaches: Impact of Technology on Organisational design - Mechanistic vs Adoptive Structures - Formal and Informal Organisation. Control: meaning, function, Process and types of Control.</p>					
<p>Individual Behavior in Organizations: Meaning of Organizational behavior, contributing disciplines, importance of organizational behavior, Perception and Learning - Personality and Individual Differences - Motivation theories and Job Performance - Values, Attitudes and Beliefs - Communication Types-Process - Barriers - Making Communication Effective.</p>					
<p>Group Dynamics, Leadership and Organizational Culture: Groups and Teams: Definition, Difference between groups and teams, Stages of Group Development, Group Cohesiveness, Types of teams, Group Dynamics - Leadership - Styles - Approaches - Power and Politics - Organisational Structure - Organisational Climate and Culture, Conflict: concept, sources, Types, Stages of conflict, Management of conflict Organisational Change and Development.</p>					
<p>Contemporary Perspectives in Organizational Behavior: Comparative Management Styles and approaches - Japanese Management Practices Organisational Creativity and Innovation - Organizational behavior across cultures- Conditions affecting cross cultural organizational operations, Managing International Workforce, Productivity and cultural contingencies, Cross cultural communication, Management of Diversity.</p>					
<p>Weightage: Continuous Assessment: 40%, End Semester Examinations: 60%.</p>					
<p>Assessment Methodology: Written Test I & II (60%) Assignment, Presentation, Case Study, Quiz, Simulation, Online Certification, Seminar, Mini project (40%)</p>					
<p>References:</p> <ol style="list-style-type: none"> DuBrin, A. J. (2020). Essentials of management (11th ed.). Thomson South Western. Certo, S. C., & Certo, T. L. (2021). Modern management: Concepts & skills (16th ed.). Pearson Education. Koontz, H., & Wehrich, H. (2020). Essentials of management: An international & leadership perspective (11th ed.). Tata McGraw Hill Education. 					

4. Robbins, S. P. (2023). Organizational behavior (19th ed.). PHI Learning/Pearson Education.
5. Luthans, F. (2015). Organizational behavior (14th ed.). McGraw Hill.
6. Nelson, D. L., Quick, J. C., & Khandelwal, P. (2018). ORGB – An innovative approach to learning & teaching (3rd ed.). Cengage Learning.
7. Pareek, U. (2020). Understanding organizational behavior (4th ed.). Oxford Higher Education.

E-Resources:

- ❖ NPTEL – Principles of Management and Organizational Behaviour (<https://nptel.ac.in>)

	CO description	PO Mapping	PSO1	PSO2
CO1	Demonstrate conceptual knowledge of management theories, planning, organizing, organization design and control, organizational behaviour, groups and leadership, and contemporary practices in organization behaviour.	PO5(1)	3	-
CO2	Interpret and relate to management theories, planning and organizing processes, perform organization design and execute control, organisational behavioural theories, groups, leadership, culture and contemporary practices in organization behaviour	PO1(1) PO5(3)	2	-
CO3	Apply theories and concepts of management to planning, organising, execution, design, control and individual and group behavior in organizations.	PO1(3) PO2(2)	3	-
CO4	Analyze management theories, planning, organizing, design, execution and control methodologies in organizational settings along with organizational behavioral practices.	PO1(3)	3	-
CO5	Evaluate the theories related to management and organizational behaviour to build model related to planning, organising, designs, execution, control and to group dynamics, team structures, and leadership styles for enhancing organizational performance.	PO1(3) PO2(2)	3	-
CO6	Develop contemporary practices, adapt and modify management theories, concept to all functions of management and to both individual and group behaviors to suit cross-cultural behaviour, diversity, and global workforce management.	PO3(2) PO4(3)	2	-

MB25C03	Managerial Economics	L	T	P	C
		4	0	0	4
Course Objectives: The course is designed to provide a strong foundation in economic principles and tools applicable to managerial decision-making. It introduces the concepts of scarcity, efficiency, and market mechanisms in both micro and macroeconomic settings.					
Introduction to Managerial Economics and Fundamental Concepts: The themes of economics, scarcity and efficiency, three fundamental economic problems, CREDITS: 3 8 society's capability, Production possibility frontiers (PPF), Productive efficiency Vs economic efficiency, economic growth & stability, Micro economics and Macro economics, the role of markets and government, Positive Vs negative externalities.					
Demand, Supply and Consumer Behavior: Market, Demand and Supply, Determinants, Market equilibrium, elasticity of demand and supply, consumer behavior, consumer equilibrium, Approaches to consumer behavior					
Production, Costs and Firm-Level Analysis: Production, Short-run and long-run Production Function, Returns to scale, economics Vs dis-economics of scale, Analysis of cost, Short-run and long-run cost function, Relation between Production and cost function - Production Pricing Model - Types of Pricing Model					
Market Structures and Factor Pricing: Product market—perfect and imperfect market—different market structures—Firm's equilibrium and supply, Market efficiency, Economic costs of imperfect competition, factor market—Land, Labour and capital—Demand and supply—determination of factor price—Interaction of product and factor market—General equilibrium and efficiency of competitive markets.					
Macroeconomic Performance Indicators: Macro-economic aggregates, circular flow of macroeconomic activity, National income determination, Aggregate demand and supply, Macroeconomic equilibrium, Components of aggregate demand and national income, multiplier effect, Demand side management, Fiscal policy in theory.					
Monetary Economics and Supply-Side Perspectives: Short-run and Long-run supply curve—Unemployment and its impact—Okun's law, Inflation and the impact—reasons for inflation—Demand Vs Supply factors—Inflation Vs unemployment trade off, Phillips curve – short- run and long-run –Supply side Policy and management- Money market- Demand and supply of money, money-market equilibrium and national income, the role of monetary policy.					
Weightage: Continuous Assessment: 40%, End Semester Examinations: 60%.					
Assessment Methodology: Written Test I & II (60%) Assignment, Presentation, Case Study, Quiz, Simulation, Online Certification, Seminar, Mini project (40%)					
References: <ol style="list-style-type: none"> Samuelson, P. A., Nordhaus, W. D., Chaudhuri, S., & Sen, A. (2019). <i>Economics</i> (20th ed.). Tata McGraw Hill. Boyes, W., & Melvin, M. <i>Text book of economics</i>. Biztantra. (Note: No year provided—if you can share that, I can add it.) Mankiw, N. G. (2022). <i>Principles of economics</i> (8th ed., India release). Thomson Learning/Cengage India. Lipsey, R., & Chrystal, A. (2015). <i>Economics</i> (13th ed.). Oxford University Press. Case, K. E., & Fair, R. C. (2019). <i>Principles of economics</i> (13th global ed.). Pearson Education Asia. 					

6. Panneerselvam, R. (2013). *Engineering economics* (2nd ed.). PHI Learning.

E-Resources:

- ❖ NPTEL: Managerial Economics (<https://nptel.ac.in>)
- ❖ RBI Bulletin and Monetary Policy Reports (<https://rbi.org.in>)

	CO description	PO Mapping	PSO1	PSO2
CO1	Demonstrate conceptual knowledge of managerial economics, fundamental concepts, demand and supply, production, costs, market structures, factor pricing, macroeconomic performance indicators, and monetary and fiscal policies.	PO5(3)	-	-
CO2	Interpret and relate foundational concepts, consumer behavior, production and cost functions, different market structures, macroeconomic aggregates, and the role of monetary and fiscal policies in influencing the business environment.	PO1(1) PO5(3)	-	-
CO3	Apply theories and concepts of management to planning, organising, execution, design, control and individual and group behavior in organizations.	PO1(3) PO4(2)	1	-
CO4	Analyze fundamental economic problems, consumer behavior, market structures, firm-level costs and pricing, macroeconomic indicators, and the effects of monetary and fiscal policies on business cycles.	PO1(3) PO3(1) PO4(2)	3	-
CO5	Evaluate the theories related to scarcity and efficiency, consumer demand, market structures, factor pricing, and macroeconomic policy frameworks to assess their impact on business performance in global and Indian contexts..	PO1(3)	3	-
CO6	Develop economic reasoning and apply contemporary practices to adapt managerial economic principles to address real-world business problems across various market structures, macroeconomic conditions, and policy landscapes.	PO3(2) PO4(2)	2	-

MB25C01	Statistics for Management	L	T	P	C
		3	1	0	4
Course Objectives:					
This course aims to provide statistical tools for data-driven decision-making, emphasizing the application of probability, hypothesis testing, regression analysis, parametric and non-parametric methods to enhance analytical skills in business scenarios.					
Probability and Probability Distributions: Basic definitions and rules for probability, conditional probability independence of events, Baye's theorem, (Theory and Problem) and random variables, Probability distributions: Binomial, Poisson, Uniform and Normal distributions (Problem).					
Sampling and Estimation Techniques: Introduction to sampling distributions, sampling distribution of mean and proportion, application of central limit theorem (Theory and Problem), sampling techniques (Problem). Estimation: Point and Interval estimates for population parameters of large sample and small samples, determining the sample size (Problem).					
Hypothesis Testing – Parametric Methods (Problem): Hypothesis testing: one sample and two sample tests for means and proportions of large samples (z- test), one sample and two sample tests for means of small samples (t-test), F-test for two sample standard deviations. ANOVA one and two way					
Hypothesis Testing – Non-Parametric Methods (Problem): Chi-square test for single sample standard deviation. Chi-square tests for independence of attributes and goodness of fit. Sign test for paired data. Rank sum test. Kolmogorov-Smirnov, test for goodness of fit, comparing two populations. Mann, Whitney U test and Kruskal Wallis test. One sample run test.					
Correlation and Regression Analysis (Problem): Correlation, Coefficient of Determination, Rank Correlation, Regression, Estimation of Regressionline, Method of Least Squares, Standard Error of estimate.					
Business Analytics Applications & Software Tools: Application of statistics - data visualization and decision making - Case studies using Excel/SPSS/R, Interpretation of output - Business scenarios - applying regression, correlation, and hypothesis tests - Introduction to data-driven storytelling - dashboarding techniques (Theory and Problem)					
Weightage: Continuous Assessment: 40%, End Semester Examinations: 60%.					
Assessment Methodology: Written Test I & II (60%) Assignment, Presentation, Case Study, Quiz, Simulation, Online Certification, Seminar, Mini project (40%)					

References:

1. Levin, R. I., Rubin, D. S., Siddiqui, M. H., & Rastogi, S. (2023). *Statistics for management* (8th ed.). Pearson Education.
2. Mann, P. S. (2020). *Introductory statistics* (10th ed.). Wiley Publications.
3. Srivastava, T. N., & Rego, S. (2017). *Statistics for management* (3rd ed.). Tata McGraw Hill.
4. Black, K. (2023). *Applied business statistics* (11th ed.). Wiley India.
5. Anderson, D. R., Sweeney, D. J., Williams, T. A., Camm, J. D., & Cochran, J. J. (2024). *Statistics for business and economics* (15th ed.). Thomson/South Western Asia.
6. Gupta, S. C., & Kapoor, V. K. (2024). *Fundamentals of applied statistics*. Sultan Chand & Sons.

E-Resources:

- ❖ NPTEL: Business Statistics and Analytics for Decision Making (<https://nptel.ac.in>)
- ❖ Statistical Tools: R (<https://cran.r-project.org>), Python (pandas, scipy), IBM SPSS, MS Excel

	CO description	PO Mapping	PSO1	PSO2
CO1	Demonstrate conceptual knowledge of probability, sampling and estimation, parametric and non-parametric hypothesis testing, correlation, regression, and their application in business analytics and software tools.	PO5(3)	-	-
CO2	Interpret and relate probability distributions, sampling techniques, the outcomes of parametric and non-parametric hypothesis tests, correlation and regression analyses, and the output from statistical software to derive meaningful business insights.	PO1(1) PO5(3)	-	2
CO3	Apply statistical concepts, including probability theory, sampling methods, various hypothesis tests, and correlation and regression models, to solve real-world business problems and make data-driven decisions.	PO1(3)	2	3
CO4	Analyze probability distributions, sampling data, the results of parametric and non-parametric tests, and regression models to evaluate business scenarios and assess the validity of statistical conclusions.	PO1(3)	3	2
CO5	Evaluate the effectiveness of different statistical tools and techniques, such as various hypothesis tests and regression models, to select the most appropriate method for a given business problem and critically appraise statistical findings..	PO1(3)	3	-
CO6	Develop data-driven solutions and strategic insights by integrating knowledge of probability, sampling, hypothesis testing, correlation, and regression, and effectively use statistical software for business analytics and data storytelling.	PO1(3) PO2(2)	3	3

MB25C04	Legal Aspects of Business	L	T	P	C
		4	0	0	4
<p>Course Objectives:</p> <p>This course introduces the key Business laws and their practical applications across commercial contracts, company operations, industry regulations, taxation (including GST), and cyber laws in managing risks. It helps learners gain critical awareness of the legal framework.</p>					
<p>Commercial Laws and Business Contracts:</p> <p>The Indian Contract Act 1872: Definition of contract, essentials elements and types of a contract, Formation of a contract, performance of contracts, breach of contract and its remedies, Quasi contracts - Contract Of Agency: Nature of agency, Creation and types of agents, Authority and liability of Agent and principal: Rights and duties of principal and agents, termination of agency.</p> <p>The Sale of Goods Act 1930: Nature of Sales contract, Documents of title, risk of loss, Guarantees and Warranties, performance of sales contracts, conditional sales and rights of an unpaid seller -</p> <p>Negotiable Instruments Act 1881: Nature and requisites of negotiable instruments. Types of negotiable instruments, liability of parties, holder in due course, special rules for Cheque and drafts, discharge of negotiable instruments - The payment and settlement systems Act, 2007.</p>					
<p>Company Law and Competition Regulations:</p> <p>Company Act 1956 & 2013: Major principles, Nature and types of companies, Formation, Memorandum and Articles of Association, Prospectus, Power, duties and liabilities of Directors, winding up of companies, Corporate Governance. Competition Act 2002 - Introduction, Definitions, Enquiry into Certain Agreements and Dominant Position of Enterprise and Combinations.</p>					
<p>Industrial Relations and Labour Legislation: An Overview of Factories Act - Payment of Wages Act - Payment of Bonus Act - Industrial Disputes Act.</p>					
<p>Corporate Taxation and Goods & Services Tax (GST): Corporate Tax Planning, Corporate Taxes and Overview of Latest Developments in Indirect tax Laws relating to GST: An introduction including constitutional aspects, Levy and collection of CGST & IGST, Basic concept of time and value of supply, Input tax credit, Computation of GST Liability, Registration, Tax Invoice, Credit & Debit Notes, Electronic Way bill, Returns, Payment of taxes including Reverse Charge.</p>					
<p>Consumer Protection and Cyber Laws: Consumer Protection Act, Consumer rights, Procedures for Consumer grievances redressal, Types of consumer Redressal Machineries and Forums-- Cyber crimes, IT Act 2000 and 2002, Cyber Laws</p>					
<p>Intellectual Property Rights (IPR) in Business: Introduction of IPR Intellectual Property Laws- Introduction, Legal Aspects of Patents, Filing of Patent Applications, Rights from Patents, Infringement of Patents, Copyright and its Ownership, Infringement of Copyright, Civil Remedies for Infringement– Copy rights, Trade marks, Patent Act. Introduction, Right to</p>					

Information Act, 2005.
Weightage: Continuous Assessment: 40%, End Semester Examinations: 60%.
Assessment Methodology: Written Test I & II (60%) Assignment, Presentation, Case Study, Quiz, Simulation, Online Certification, Seminar, Mini project (40%)
References: <ol style="list-style-type: none"> 1. Kapoor, N. D. (2024). <i>Elements of mercantile law</i> (39th rev. ed.). Sultan Chand and Company. 2. Goel, P. K. (2023/24). <i>Business law for managers</i> (2nd ed.). Biztantra Publishers. 3. Pathak, A. (2022). <i>Legal aspects of business</i> (8th ed.). Tata McGraw Hill. 4. Kumar, R. (2016). <i>Legal aspects of business</i> (4th ed.). Cengage Learning. 5. Sinha, P. K., & Singhania, V. (2017/18). <i>Text book of indirect tax</i>. Taxmann Publication. 6. Taxmann. (2023). <i>GST manual with GST law guide & digest of landmark rulings</i> (12th ed.).
E-Resources: <ul style="list-style-type: none"> ❖ Ministry of Corporate Affairs: https://www.mca.gov.in ❖ GST Portal: https://www.gst.gov.in ❖ WIPO Intellectual Property Resources: https://www.wipo.int

	CO description	PO Mapping	PSO1	PSO2
CO1	Demonstrate conceptual knowledge of commercial laws, company law, industrial relations and labor legislation, corporate taxation (including GST), consumer protection, cyber laws, and intellectual property rights (IPR)..	PO5(3)	-	-
CO2	Interpret and relate key legal principles from contract law, company regulations, industrial acts, taxation frameworks, consumer protection laws, and intellectual property statutes to understand the legal environment of business.	PO1(1) PO5(3)	-	-
CO3	Apply legal principles and frameworks from commercial and company law, labor legislation, tax laws, and IPR to evaluate business contracts, corporate governance practices, compliance requirements, and the protection of business innovations.	PO1(3) PO4(3)	1	-
CO4	Analyze legal and regulatory frameworks, including competition law, industrial relations acts, corporate tax and GST provisions, cyber laws, and IPR, to assess their impact on business operations, risk management, and strategic decision-making.	PO1(3) PO3(1) PO4(2)	3	2
CO5	Evaluate the effectiveness of various legal provisions and frameworks, such as consumer protection and cyber laws, and IPR, to build compliance strategies, mitigate legal risks, and ensure ethical and sustainable business practices.	PO1(2) PO3(3)	3	2
CO6	Develop contemporary legal compliance and risk management strategies by integrating knowledge of commercial law, company law, industrial relations, taxation, and cyber and IPR laws to ensure effective and ethical business operations in a global context.	PO1(3) PO3(2)	3	2

BN25C01	Managerial Decision Science	L	T	P	C
		4	0	0	4
Course Objectives:					
This course equips managers with skills in data analytics and visualization tools, including spreadsheets, Tableau, and project management software. It focuses on using data insights to solve business problems and make informed decisions in dynamic environments.					
Foundations of Data-Driven Decision Making: Role of Data Analytics in Decision Making, Business Analytics and Classification. Understanding the significance of data-driven decision-making in modern business, Influence of analytics on managerial decisions, Data analytics lifecycle, Choosing the right tool for the right task. Introduction to Spreadsheets, PowerBI, Tableau, and Project Management Tools, Setting up software tools and resources.					
Spreadsheet-Based Data Analysis: Spreadsheets for Data Analysis: Spreadsheets as fundamental data analysis tool, Basic operations, data entry, and cell references, Using formulas and functions for data manipulation. Understanding PivotTables and their role in data summarization, Creating PivotTables and Pivot Charts, Customizing PivotTables for effective analysis. Using advanced Spreadsheet functions (e.g., VLOOKUP, IF, INDEX-MATCH).					
Data Visualization Principles and Practices: Principles of effective data visualization. Choosing the right chart type for different data scenarios. Customizing charts for clarity. Creating Advanced Charts in Spreadsheets, Building advanced charts (e.g., trendlines, combo charts, and waterfall charts). Case studies and exercises applying advanced functions.					
Interactive Dashboards and Tableau Basics: Concepts of dashboards - real-time reporting - Introduction to Tableau – Connecting to data sources – Data transformation and joins - Creating dashboards with filters, parameters, and interactivity - Advanced visualizations: Geo maps, heatmaps, KPI tiles, forecasting in Tableau					
Storytelling with Data and Collaboration: Data storytelling: Frameworks and techniques – Narrative-driven dashboards - Building effective presentations using charts and visuals - Sharing dashboards and collaborating across teams using cloud platforms - Introduction to Power BI - comparison with Tableau					
Introduction to Project Management Tools and Integration: Basics of Project Management, Using popular Tools to understand Project Interface and Basics, Task Scheduling and Dependencies, Resource Allocation and Tracking, Gantt Charts and Reporting, Tracking project progress and updates.					
Weightage: Continuous Assessment: 40%, End Semester Examinations: 60%.					
Assessment Methodology: Written Test I & II (60%) Assignment, Presentation, Case Study, Quiz, Simulation, Online Certification, Seminar, Mini project (40%)					
References:					
<ol style="list-style-type: none"> 1. Dinesh Kumar, U. (2020). Business analytics: The science of data-driven decision making. Wiley India. 2. Evans, J. R. (2012). Business analytics: Methods, models and decisions. Pearson 					

Education.

3. Winston, W. (2017). Microsoft Excel 2016 data analysis and business modelling. Microsoft Press.
4. Maheswari, U., & Sujatha. (2021). Introduction to data science: Practical approach with R and Python. Wiley.
5. Milligan, J. N. (2022). Learning Tableau. Packt Publishing.
6. Deckler, G., Powell, B., & Gordon, L. (2022). Mastering Microsoft Power BI. Packt Publishing Ltd.

E-Resources:

- ❖ <https://powerbi.microsoft.com> – Microsoft Power BI resources
- ❖ <https://support.microsoft.com/excel> – Excel documentation and training
- ❖ <https://nptel.ac.in> – NPTEL courses on Business Analytics, Data Visualization

	CO description	PO Mapping	PSO1	PSO2
CO1	Demonstrate conceptual knowledge of data-driven decision-making, spreadsheet-based data analysis, data visualization principles, interactive dashboards using Tableau, data storytelling, and the use of project management tools for business problem-solving.	PO1(1) PO5(3)	1	1
CO2	Interpret and relate to the foundations of data-driven decision-making, advanced spreadsheet functions, data visualization principles, interactive dashboard creation, data storytelling techniques, and project management tools for planning and tracking.	PO1(2) PO5(3)	2	2
CO3	Apply data-driven decision-making concepts to practical problems using spreadsheet-based analysis, data visualization techniques, interactive dashboards with Tableau, data storytelling frameworks, and project management tools for execution and control.	PO1(3) PO5(1)	3	3
CO4	Analyze the role of data analytics in decision-making, complex spreadsheet functions, different data visualization scenarios, data transformation and insights from interactive dashboards, narrative-driven data storytelling, and the application of project management tools in a business context.	PO1(3) PO2(2)	3	3
CO5	Evaluate the significance of data-driven decision-making, the effectiveness of spreadsheet-based analysis, the clarity and impact of data visualizations, the insights derived from interactive dashboards, the power of data storytelling, and the utility of project management tools for enhancing organizational performance.	PO1(3) PO2(2) PO4(1)	3	3
CO6	Develop contemporary practices in data-driven decision-making, adapt spreadsheet and visualization techniques, modify interactive dashboards in Tableau, and create data storytelling presentations and project management plans to suit various business scenarios.	PO2(3) PO4(2)	3	3

BN25C02	Data Management and Data Engineering	L	T	P	C
		4	0	0	4
<p>Course Objectives:</p> <p>This course establishes foundational and practical knowledge of data management systems, big data technologies, and cloud computing. It focuses on applying these concepts to design, implement, and manage data pipelines for real-world business intelligence and analytics applications.</p>					
<p>Foundations of Data Management Systems: Database System Concepts – Database Architecture - Data model – Data Warehouse – Data Marts – Data Lake - Batch, Stream, and Micro-batch Processing - Concepts of ETL – SQL – The CAP Theorem - NOSQL Databases</p>					
<p>Big Data Ecosystem and Use Cases: What is Big Data? - Big Data Technologies Based on MapReduce and Hadoop - Hadoop Distributed File System (HDFS) – YARN– Case Study- Preventing Private Information Inference Attacks on Social Networks-Grand Challenge: Applying Regulatory Science and Big Data to Improve Innovation.</p>					
<p>Cloud Platforms and AWS Ecosystem: Cloud Computing – Overview of Google Cloud Platform and Microsoft Azure – Detailed study of AWS Ecosystem - AWS Analytics Services - AWS Data Movement Services - AWS Predictive Analytics & Machine Learning Services – Amazon Redshift – Amazon EMR – Amazon MSK – Amazon Kinesis - AWS Serverless - AWS Lambda</p>					
<p>Data Engineering and Governance: Key Data Mining Algorithms - Data Governance Tools – Data Stewardship, Data Quality, Master Data Management (MDM) - Data Security – Statistical Database Security – Flow Control - Encryption and Public Key Infrastructures..</p>					
<p>R Programming for Data Analytics: Overview, Programming structures: Control statements -Operators -Functions -Environment and scope issues - Recursion -Replacement functions, R data structures: Vectors -Matrices and arrays - Lists -Data frames - Classes, Input/output, String manipulations..</p>					
<p>Integration and Application in Business Contexts: Integration of R and SQL - data querying and reporting - Data pipelines and automation in business analytics - Trends in data engineering: DataOps, containerization, orchestration - Industry case studies in financial, healthcare, and retail analytics</p>					
<p>Weightage: Continuous Assessment: 40%, End Semester Examinations: 60%.</p>					
<p>Assessment Methodology: Written Test I & II (60%) Assignment, Presentation, Case Study, Quiz, Simulation, Online Certification, Seminar, Mini project (40%)</p>					
<p>References:</p> <ol style="list-style-type: none"> Berthold, M., & Hand, D. J. (2007). Intelligent data analysis. Springer. Rajaraman, A., & Ullman, J. D. (2020). Mining of massive datasets. Cambridge University Press. 					

3. Wickham, H., & Grolemund, G. (2016). R for data science: Import, tidy, transform, visualize, and model data. O'Reilly Media, Inc.
4. Laudon, K. C., & Laudon, J. P. (2025). Management information systems: Managing the digital firm. Pearson.
5. Panneerselvam, R. (2018). Database management systems. PHI Learning.
6. Matloff, N. (2011). The art of R programming: A tour of statistical software design. No Starch Press.

E-Resources:

- ❖ AWS Training and Certification: <https://aws.amazon.com/training>
- ❖ R Project for Statistical Computing: <https://cran.r-project.org>
- ❖ NPTEL: Data Science and Big Data Analytics (IIT Madras / IIT Kharagpur)
- ❖ Apache Hadoop Documentation: <https://hadoop.apache.org>

	CO description	PO Mapping	PSO1	PSO2
CO1	Demonstrate conceptual knowledge of foundational data management systems, big data ecosystems, cloud platforms (AWS), data engineering, governance practices, R programming for analytics, and the integration of these tools in a business context.	PO1(3) PO5(3)	2	2
CO2	Interpret and relate to database system architectures, big data technologies like Hadoop, the AWS ecosystem, data governance standards, R programming structures, and the application of data pipelines and automation in business analytics.	PO5(3)	2	2
CO3	Apply theories and concepts of data management, big data, AWS services, data governance, R programming, and data pipeline integration to solve real-world business analytics problems.	PO1(3) PO5(3)	3	3
CO4	Analyze data management systems, big data technologies and use cases, cloud platform services, data engineering and governance methodologies, R programming for data manipulation, and integrated data solutions in various business settings.	PO1(3)	3	3
CO5	Evaluate the theories and practices related to data management systems, big data technologies, cloud platforms, data governance, R programming, and data pipeline orchestration to build models for enhancing business intelligence.	PO1(3) PO4(2)	2	2
CO6	Develop contemporary practices, adapt and modify data management, big data, cloud computing, data governance, R programming, and integration concepts to suit modern data engineering trends and real-world business applications.	PO3(2)	2	2

BN25C03	Financial Accounting and Management	L	T	P	C
		3	1	0	4
<p>Course Objectives:</p> <p>To cultivate an understanding of financial accounting and management principles, enabling the application of analytical and strategic skills for informed financial decisions and efficient resource management in a business context.</p>					
<p>Introduction to Financial Accounting and Reporting: Introduction to Financial, Cost and Management Accounting–Generally accepted accounting principles– Double Entry System– Preparation of Journal, Ledger and Trial Balance, Preparation of Final Accounts: Trading, Profit and Loss Account and Balance Sheet (Problem) - Reading the financial statements.</p>					
<p>Financial Statement Analysis and Modeling: Financial ratio analysis, Interpretation of ratio for financial decisions – Dupont Ratios – comparative statements - common size statements. Cash flow (as per Accounting Standard 3) and Funds flow statement analysis (Problem) –Trend Analysis – Financial modeling</p>					
<p>Financing and Dividend Decisions: Introduction of Finance – nature and scope of finance functions – Indian Capital Market – New issues of market – Secondary market – sources of long-term finance Leverages - Operating and Financial leverage (Problem) – measurement of leverages – degree of Operating & Financial leverage – Combined leverage, EBIT – EPS Analysis- Indifference point - Determinants of Capital structure. Dividend decision – Issues in dividend decisions, Importance – Factors determining dividend policy – Types of dividend policies – forms of dividend</p>					
<p>Investment Decision-Making: 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, Profitability Index (Problem) - Comparison of DCF techniques - Concept and measurement of cost of capital - Specific cost and overall cost of capital.</p>					
<p>Working Capital Management: Principles of working capital: Concepts, Needs, Determinants, issues and estimation of working capital (Problem) - Receivables Management – Inventory management – Cash management – Working capital finance: Commercial paper, Company deposit, Trade credit, Bank finance.</p>					
<p>Modern Financial Tools and Business Applications: Spreadsheet-based financial calculations and modeling - Real-time decision-making using finance dashboards - Digital transformation in financial accounting (ERP systems, Tally, Zoho Books) - Industry use-cases in capital budgeting, credit risk, and cash flow planning</p>					
<p>References:</p> <ol style="list-style-type: none"> 1. Narayanaswamy, R. (2022). Financial accounting (7th ed.). PHI. 2. Khan, M. Y., & Jain, P. K. (2021). Management accounting (8th ed.). Tata McGraw Hill. 3. Singhvi, N. M., & Bodhanwala, R. J. (2018). Management accounting: Text and cases (3rd ed.). PHI. 					

4. Pandey, M. (2021). Financial management (12th ed.). Vikas Publishing House Pvt. Ltd.
5. Bhattacharya, A. K. (2012). Introduction to financial statement analysis (latest ed.). Elsevier/PHI.
6. Reddy, T. S., & Murthy, A. (2024). Financial accounting (2024 ed.). Margham Publications.

E-Resources:

- ❖ <https://nptel.ac.in/courses/110105135> – NPTEL: Financial Accounting
- ❖ <https://www.investopedia.com> – Accounting & Financial Tools
- ❖ <https://corporatefinanceinstitute.com> – Financial Modeling Tutorials
- ❖ YouTube: Prasanna Chandra's Lectures on Finance
- ❖ Tally Education Portal – <https://www.tallyeducation.com>

	CO description	PO Mapping	PSO1	PSO2
CO1	Demonstrate conceptual knowledge of financial accounting and reporting, financial statement analysis, financing and dividend decisions, investment decision-making techniques, working capital management, and modern financial tools and their applications in business.	PO5(3)	2	-
CO2	Interpret and relate to accounting principles, financial modeling and ratio analysis, financing and dividend policies, capital budgeting techniques, working capital concepts, and the use of digital tools and dashboards for real-time reporting.	PO5(3)	2	-
CO3	Apply the theories and concepts of financial accounting to prepare and analyze financial statements, make financing and dividend decisions, evaluate investment proposals using capital budgeting techniques, manage working capital efficiently, and utilize spreadsheet-based financial modeling for business applications.	PO1(3) PO5(3)	3	1
CO4	Analyze the methodologies of financial accounting, financial statement modeling, financing and dividend decisions, capital budgeting techniques, working capital management, and the use of modern financial tools in various organizational settings.	PO1(3) PO4(2)	3	-
CO5	Evaluate the theories and practices related to financial accounting and reporting, financial statement analysis, financing and dividend decisions, investment decision-making, working capital management, and modern financial tools to build models for enhancing organizational performance.	PO1(3) PO3(2) PO4(2)	3	-
CO6	Develop contemporary practices, adapt and modify the concepts of financial accounting and management to all finance functions, including financial statement preparation, ratio analysis, financing decisions, capital budgeting, working capital management, and the use of digital tools and dashboards to suit cross-functional business scenarios.	PO1(3) PO4(2)	3	3

MB25C05	Contemporary Business Communication	L	T	P	C
		0	0	4	2
Course Objectives: This course aims to equip essential business communication skills required for modern managerial roles. It emphasizes both oral and written communication for various Business contexts such as interviews, meetings, presentations, professional correspondence..					
Communication Fundamentals and Managerial Speech Practice: Introduction to Business Communication: Principles of effective communication, Target group profile, Barriers of Communication, Reading Skills, Listening, Feedback., Principles of Nonverbal Communication: Professional dressing and body language. Role Playing, Debates and Quiz. Types of managerial speeches - Presentations and Extempore, speech of introduction, speech of thanks, occasional speech, theme speech., Group communication: Meetings, group discussions. , Other Aspects of Communication: Cross Cultural Dimensions of Business Communication Technology and Communication, Ethical & Legal Issues in Business Communication.					
Business Writing and Corporate Communication Tools: Business letters, Routine letters, Bad news and persuasion letters, sales letters, collection letters, Maintaining a Diary, Resume/CV, job application letters, proposals. Internal communication through, notices, circulars, memos, agenda and minutes, reports. Case Studies. Exercises on Corporate Writing, Executive Summary of Documents, Creative Writing, Poster Making, Framing Advertisements, Slogans, Captions, Preparing Press Release and Press Notes					
Presentation and Public Speaking Skills: Principles of Effective Presentations, Principles governing the use of audiovisual media.					
Interviewing and Job Preparedness: Mastering the art of giving interviews in, selection or placement interviews, discipline interviews, appraisal interviews, exit interviews, web /video conferencing, tele-meeting.					
Business Networking and Personal Branding: Business networking techniques – Ice-breakers, small talk, digital etiquette – Conversational intelligence – Professional dining etiquette – Social media presence and grooming – Self-confidence and image management – Real-life simulations and feedback.					
Report Writing and Analytical Communication: Objectives of report, types of report, Report Planning, Types of Reports, Developing an outline, Nature of Headings, Ordering of Points, Logical Sequencing, Graphs, Charts, Executive Summary, List of Illustration, Report Writing.					
Note: The emphasis of the entire subject should be on practical aspects.					
Practical: This module introduces both written and spoken communication skills to students to build their confidence in delivering clear and logical messages to their audience. They will develop written communication skills through crafting Business messages such as Business letters, emails, and meeting minutes. In addition, students will work through presentations and simulated meetings to refine their spoken communication skills, discussion techniques and people skills.					
Practical: This module builds on the foundation of Business Communication 1 and creates opportunities for students to strengthen their oral and written communication. Students will be required to enhance their presentation skills through impromptu speeches. Students will also learn how to prepare a formal Business report. Job hunting and employment skills will be introduced to prepare students for a positive start to their careers. Students will be taught to write application letters and resumes. Additionally, students will learn job interview					

techniques through role-plays and simulations
Practical: This practical module aims to help students be persuasive in the Business world. Students will learn listening and data gathering skills to better understand their target audience's needs and requirements and persuasive skills to convince the audience to accept a new policy/suggestion/product through role-playing a boardroom presentation. Students will also be taught Business networking skills including conversation techniques, dining etiquette and personal branding through role-plays and simulations.
References: <ol style="list-style-type: none"> 1. Pal, R., & Korlahalli, J. S. (2011). <i>Essentials of business communication</i> (13th rev. ed.). Sultan Chand. 2. Raman, M., & Singh, P. (2012). <i>Business communication</i> (2nd ed.). Oxford. 3. Sharma, R. C., & Mohan, K. (2020). <i>Business correspondence & report writing</i> (6th ed.). Tata McGraw Hill. 4. Goodale, M. <i>Professional presentations: Developing communication skills</i>. Cambridge University Press. (Note: Year not provided; please share if you have it.) 5. Adair, J. <i>Effective communication</i>. Pan Macmillan. (Note: Year not provided; please share if you have it.) 6. Thill, J. V., & Bovee, G. L. (2023/2024). <i>Excellence in business communication</i> (14th ed.). McGraw Hill.
E-Resources: <ul style="list-style-type: none"> ❖ NPTEL – Soft Skills https://onlinecourses.nptel.ac.in/noc21_hs76 ❖ MindTools – Communication Skills Portal www.mindtools.com/cawh8bu/communication-skills ❖ TEDx – Effective Speaking & Personal Branding https://www.youtube.com

	CO description	PO Mapping	PSO1	PSO2
CO1	Demonstrate effective verbal and non-verbal communication skills, including public speaking, written correspondence, interviewing, professional networking, and report writing, in various business contexts.	PO2(3) PO5(3)	-	-
CO2	Interpret and relate the principles of effective communication, business writing, presentation techniques, job preparedness, and professional networking to develop clear and persuasive communication strategies.	PO2(3) PO5(3)	-	-
CO3	Apply communication fundamentals, business writing techniques, public speaking skills, interviewing strategies, networking etiquette, and report writing principles to solve real-world business communication challenges.	PO1(1) PO2(3) PO4(2)	-	-
CO4	Analyze business communication scenarios, including managerial speeches, written correspondence, interviews, and networking interactions, to adapt communication styles for different audiences and purposes.	PO2(3)	2	2
CO5	Evaluate the effectiveness of various communication methods, including presentations, professional	PO2(3) PO3(2)	-	-

	correspondence, and reports, to build a personal brand, foster professional relationships, and enhance business communication.	PO5(3)		
CO6	Develop a comprehensive communication plan and strategy by integrating knowledge of communication fundamentals, written correspondence, public speaking, job preparedness, networking, and analytical reporting to effectively lead and manage in a modern business environment.	PO2(3) PO3(2)	3	2

BN25C04	Data Science Tools – I	L	T	P	C
		0	0	4	2
<p>Course Objectives: This course aims to build practical competency in data handling, statistical analysis, and predictive modeling using industry-standard tools. The objective is to apply these skills through hands-on practice with spreadsheets, Power BI, Tableau, and Python, enabling the development of analytical dashboards and models to support business decision-making.</p>					
<p>Spreadsheet-Based Data Manipulation and Analytics: Sorting and filtering data, Formulas and functions for data manipulation, PivotTables and Pivot Charts for data summarization.</p> <p>Practical Exercise 1: Sales Data Analysis and Reporting: Use a provided dataset of sales transactions. Apply filters to identify sales from a specific region and for a particular product category. Use formulas like SUM, AVERAGE, and COUNTIF to calculate key metrics such as total revenue, average order value, and the number of orders per customer segment. Create a PivotTable to summarize total sales by Product and Region, and then generate a Pivot Chart to visualize this summary.</p> <p>Practical Exercise 2: Human Resources (HR) Data Management: Given an employee dataset with columns like Employee ID, Department, Hire Date, and Salary, sort the data by Salary in descending order to find the highest earners. Use a custom filter to display employees hired within the last two years. Create a PivotTable to show the average salary for each department and job title. Use a calculated field within the PivotTable to compute the total annual cost per department.</p>					
<p>Statistical Analysis and Modeling in Excel: Descriptive Statistics - Measures of central tendency and variability, Frequency distributions and histograms, Summary statistics in Excel. Inferential Statistics - Analysis of variance (ANOVA). Chi square test - Regression Analysis – Understanding regression analysis, Simple linear regression, Multiple linear regression.</p> <p>Practical Exercise 1: Marketing Campaign Effectiveness: Use a dataset with Advertising Spend and Sales Revenue for several months. Generate descriptive statistics for both variables using the Data Analysis Toolpak. Create a histogram for Sales Revenue to visualize its distribution. Perform a simple linear regression to determine the relationship between Advertising Spend and Sales Revenue. Interpret the regression output, focusing on the R-squared value and the p-value of the independent variable.</p> <p>Practical Exercise 2: Quality Control and Process Improvement: Given data on product defects from two different manufacturing lines, use an ANOVA test to determine if there is a statistically significant difference in the average number of defects between the two lines. For a separate dataset of product classifications (e.g., Good, Defective) across different factories, use a Chi-square test to see if there is a relationship between Factory and Product Classification.</p>					
<p>Data Visualization with Tableau: Getting Started with Tableau, Dimensions vs. Measures, Discrete vs Continuous, Application of Discrete and Continuous Fields, Aggregation in Tableau. Working with Metadata, Filters in Tableau, Applying Analytics to the worksheet, Dashboard in Tableau, Modifications to Data Connections, Edit Data Source, Unions, Joins Data blending.</p> <p>Practical Exercise 1: Visualizing Financial Performance: Connect to a financial dataset containing sales, profit, and expense information. Create a line chart showing the trend of Sales over time. Build a packed bubble chart to visualize Profit by Product Category.</p>					

Combine these and other relevant visualizations into a dashboard. Ensure the dashboard is interactive, allowing users to filter all charts by a specific Region.

Practical Exercise 2: HR Analytics Dashboard: Use an HR dataset with information on Department, Job Role, Salary, and Performance Score. Create a bar chart showing the average Salary by Department. Use a scatter plot to analyze the relationship between Years of Service and Performance Score. Build a dashboard that includes these visuals along with filters for Department and Job Role.

Power BI for Interactive Visualization and Reporting: Introduction to PowerBI – Working with data – Importing from flat files, excel files, other Sources, Data Sources in Power BI Desktop, Loading Data in Power BI Desktop, Views in Power BI Desktop, Query Editor in Power BI, Transform, Clean, Shape, and Model Data Manage Data Relationship, editing a Relationship, Cross Filter Direction, Saving Workfile Measures. Data Analysis Expressions – Introduction to Power Query – Introduction to Power View – Power View visualizations – Power View filtering options – Introduction to Power Map – Preparing geospatial data – Publish from Power BI desktop – Publish Dashboard to Web.

Practical Exercise 1: Supply Chain and Logistics Report: Import a sales CSV file and a product Excel file into Power BI Desktop. Use the Power Query Editor to clean the data, such as removing columns or splitting text. Create a relationship between the two tables based on a common Product ID. Build a report with visualizations that include a map showing total sales by country, a bar chart of sales by product, and a filter for order date.

Practical Exercise 2: Marketing and Customer Insights Dashboard: Import a dataset that contains customer data, including Customer ID, Purchase Frequency, and Purchase Amount. Create DAX measures to calculate the average purchase amount per customer. Build a dashboard that includes a donut chart showing the distribution of customer segments, a card for the total number of customers, and a bar chart showing purchase amount by customer segment. Publish the final dashboard to the Power BI Service.

Introduction to Business Analytics Using Python: Overview of business analytics and its applications. Introduction to Python for data analysis. Setting up Python environment (Anaconda, Jupyter Notebooks). Introduction to python variable declaration, Keywords, Indents in Python, Python input/output operations, Python's Built-in Data types, Conditional Statements & Loop Conditional Statements, Function in python, File Processing. Modules - Concept of modularization, Importance of modules in python, Importing modules, Built in modules (ex: Numpy)

Practical Exercise 1: Data Exploration with Python: In a Jupyter Notebook, write a Python script to declare variables of different types (e.g., a string for Product Name, a float for Unit Price, and a list of Regions). Read a provided CSV file into a Pandas DataFrame. Use basic DataFrame functions like head(), describe(), and shape to understand the data. Filter the DataFrame to select rows where a specific condition is met, such as sales greater than a certain value.

Practical Exercise 2: Python Functions and Control Flow: Write a Python function that takes a list of numbers (e.g., Sales Amounts) and returns the sum. Create another function that uses conditional statements (if-elif-else) to classify a customer as High Value, Medium Value, or Low Value based on their total spending. Use a for loop to iterate through a list of departments and print a message for each.

Integration, Application & Capstone Mini Project: End-to-end business case: data import → clean → analyze → visualize - Cross-platform case implementation (e.g., Excel + Power BI or Python + Tableau) - Designing analytical dashboards and models for decision support -

Capstone mini-project with real-world data from marketing, finance, or HR analytics.

Practical Exercise 1: Cross-Platform Business Case: Start with a messy dataset in Python (Jupyter Notebooks). Use the Pandas library to handle missing values, correct data types, and remove duplicates. Save the cleaned data to a new CSV file. Connect to this cleaned CSV file in Tableau and build a dynamic, interactive dashboard to present key insights from the data, such as sales performance and regional trends.

Practical Exercise 2: Comprehensive Capstone Project: Given a real-world dataset (e.g., from marketing or HR), define a business problem to solve. Use Python to import and prepare the data. Conduct a statistical analysis in Excel to test a hypothesis. Build a comprehensive, interactive dashboard in Power BI that visualizes the results. Prepare a short report summarizing the findings and providing actionable recommendations.

References:

1. Motwani, B. (2022). Data analysis using Python (6th ed. or later). Wiley.
2. Hyman, J. A. (2025, December). Microsoft Power BI for dummies (2nd ed.). Wiley.
3. Manohar, H. L. (2017). Data analysis and business modelling using Excel. PHI.
4. Wickham, H., & Golemund, G. (2016). R for data science. O'Reilly.
5. Stevenson, W. J., & Ozgur, C. (2009). Introduction to management science with spreadsheet. Tata McGraw-Hill.

E-Resources:

- ❖ <https://powerbi.microsoft.com> – Microsoft Power BI training
- ❖ <https://realpython.com> – Python tutorials
- ❖ <https://www.kaggle.com> Practice datasets and notebooks

	CO description	PO Mapping	PSO1	PSO2
CO1	Demonstrate conceptual knowledge of spreadsheet-based data manipulation, statistical analysis in Excel, data visualization with Tableau, interactive reporting with Power BI, Python programming for data analysis, and the integration of these tools for a capstone project.		-	-
CO2	Interpret and relate to data manipulation and analytics in spreadsheets, statistical and regression models, data visualization principles in Tableau, interactive dashboards in Power BI, Python data types and structures, and the application of these tools for end-to-end business cases.	PO2(1) PO5(3)	-	-
CO3	Apply the theories and concepts of spreadsheet analytics, statistical modeling, data visualization in Tableau, interactive reporting in Power BI, Python programming, and cross-platform integration to solve real-world business analytics problems.	PO5(3)	-	-
CO4	Analyze methodologies for data manipulation and summarization in spreadsheets, statistical and regression analysis, data visualization in Tableau, data transformation and modeling in Power BI, Python for data analysis, and integrated analytical dashboards for decision support.	PO2(3) PO4(2) PO5(3)	2	2
CO5	Evaluate the theories and practices related to spreadsheet analytics, statistical and regression	PO2(2) PO4(2)	-	-

	modeling, interactive dashboards in Tableau and Power BI, Python programming, and cross-platform integration to build models for enhancing business decision-making.	PO5(3)		
CO6	Develop contemporary practices, adapt and modify data manipulation techniques, statistical models, visualizations, interactive reports, Python scripts, and tool integration concepts to suit various business analytics problems and capstone projects.	PO2(2) PO4(2) PO5(3)	3	2

Course Objectives:

This course aims to provide an in-depth understanding of strategic and operational aspects of Human Resource Management (HRM) in modern organizations. It equips students with competencies in manpower planning, recruitment, training, performance management, employee engagement, and digital HR practices. The course emphasizes current trends such as HR analytics, self-development, knowledge management, and technology-enabled HR practices within the Indian and global Business contexts. Students will gain exposure to real-time HR challenges and how to align HR strategy with organizational goals.

Strategic Perspectives in Human Resource Management

Evolution of human resource management – The importance of the human capital – Role of human resource manager – Challenges for human resource managers - trends in Human resource policies – Computer applications in human resource management – Human resource accounting and audit – Introduction to HR analytics.

Workforce Planning and Talent Acquisition

Importance of Human Resource Planning – Forecasting human resource requirement – matching supply and demand - Internal and External sources - Organizational Attraction - Recruitment, Selection, Induction and Socialization - Theories, Methods and Process – Legal and ethical issues in hiring.

Training, Development and Knowledge Management

Types of training methods –purpose- benefits- resistance. Executive development programme – Common practices - Benefits – Self development – Knowledge management systems and practices.

Motivation, Compensation, and Career Engagement

Compensation plan – Reward – Motivation – Application of theories of motivation – Career management – Mentoring - Development of mentor – Protégé relationships- Job Satisfaction, Employee Engagement, Organizational Citizenship Behavior: Theories, Models.

Performance Management and Employee Movement

Method of performance evaluation – Feedback – Industry practices. Promotion – Demotion, Transfer and Separation – Implication of job change. The control process – Importance – Methods – Requirement of effective control systems grievances – Causes Implications – Redressal methods.

HR Governance and Emerging Issues

HR control processes – Legal compliance in HRM – Diversity and Inclusion – Ethical HR practices – Employee wellbeing – Future of work: AI in HRM, remote workforce management – HR metrics and dashboards – Global HRM trends – Sustainable HRM practices.

References:

1. Gary Dessler & Biju Varkkey, Human Resource Management, 16th Ed., Pearson Education, 2024.
2. David A. DeCenzo, Stephen P. Robbins, Susan L. Verhulst, Fundamentals of Human Resource Management, Wiley, 13th Ed., 2024
3. Uday Kumar Haldar, Juthika Sarkar, Human Resource Management, Oxford University Press, 2nd Ed., 2023.
4. Wayne F. Cascio, Managing Human Resources: Productivity, Quality of Work Life, Profits, McGraw Hill, 12th Ed., 2024.
5. Michael Armstrong, Armstrong's Handbook of Strategic Human Resource Management, Kogan Page, 8th Ed., 2023.
6. Luis R. Gomez-Mejia et al., Managing Human Resources, Pearson, 8th Ed., 2023.
7. Dipak Kumar Bhattacharyya, HR Analytics: Understanding Theories and Applications, Sage Publications, 2nd Ed., 2022.
8. Ivancevich, Human Resource Management, McGraw Hill, 14th Ed., 2023.
9. Bernardin, Human Resource Management, Tata McGraw Hill, 11th Ed., 2022.

E-Resources:

- ❖ SHRM India Knowledge Center
- ❖ HBR Human Resource Management Articles
- ❖ Coursera – HR Management Specialization
- ❖ LinkedIn Learning – Human Resources Courses
- ❖ AIHR – Academy to Innovate HR
- ❖ People Matters

Course Outcomes

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

CO1: Demonstrate conceptual knowledge of strategic HRM, workforce planning, talent acquisition, training and development, compensation, performance management, employee relations, and emerging HR trends and governance.

CO2: Interpret and relate the evolution of HRM, human resource planning, training and development programs, motivational theories, performance evaluation methods, and emerging HR trends to the overall organizational context.

CO3: Apply HRM principles and practices, including workforce planning, recruitment, selection, training methods, compensation models, and grievance redressal, to solve real-world organizational challenges.

CO4: Analyze human resource strategies, talent acquisition processes, training and development needs, compensation plans, performance management systems, and emerging HR trends to align them with organizational goals.

CO5: Evaluate different HR practices, including training programs, motivational theories, performance management systems, and legal frameworks, to make informed decisions and build a robust HR governance model.

CO6: Develop contemporary HR policies and strategies by integrating knowledge of HR planning, talent management, performance evaluation, and emerging trends like HR analytics and AI to foster a diverse, engaged, and ethical workforce.

Internal Assessment Methodology – Total: 100 Marks

Component	Weightage
Written Test I & II	60%
Assignment, Presentation, Case Study, Quiz, Simulation, Online Certification, Seminar, Mini project	40%

CO–PO–PSO Mapping Matrix:

CO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2
CO1	3	3	2	2	2	3	2
CO2	3	3	3	2	2	3	3
CO3	2	3	3	2	3	2	2
CO4	3	2	3	3	2	3	2
CO5	3	3	3	3	2	3	3
CO6	3	3	3	3	3	3	3

Note: 1 – Low, 2 – Medium, 3 – High

Course Objectives:

This course aims to develop a comprehensive understanding of marketing fundamentals, strategic planning, and marketing mix decisions in dynamic global and digital environments. Students will learn to analyze buyer behavior, develop market-driven strategies, and apply contemporary tools in digital and social media marketing. The course also equips learners with skills in customer relationship management, ethical marketing practices, and data-driven decision-making. Emphasis is placed on real-world application through case analysis, marketing research, and simulations aligned with global and Indian Business scenarios.

Foundations of Marketing and Business Environment

Defining Marketing – Core concepts in Marketing – Evolution of Marketing – Marketing Planning Process – Scanning Business environment: Internal and External – Value chain – Core Competencies – PESTEL – SWOT Analysis – Marketing interface with other functional areas – Production, Finance, Human Relations Management, Information System – Marketing in global environment – International Marketing – Rural Marketing – Prospects and Challenges.

Strategic Marketing and Market Segmentation

Marketing strategy formulations – Key Drivers of Marketing Strategies - Strategies for Industrial Marketing – Consumer Marketing – Services marketing – Competition Analysis – Analysis of consumer and industrial markets – Influence of Economic and Behavioral Factors – Strategic Marketing Mix components.

Product, Pricing, and Channel Decisions

Product planning and development – Product life cycle – New product Development and Management – Defining Market Segmentation – Targeting and Positioning – Brand Positioning and Differentiation – Channel Management – Managing Integrated Marketing Channels – Managing Retailing, Wholesaling and Logistics – Advertising and Sales Promotions – Pricing OBJECTIVE, Policies and Methods

Consumer and Organizational Buyer Behavior

Understanding Industrial and Consumer Buyer Behavior – Influencing factors – Buyer Behaviour Models – Online buyer behaviour – Building and measuring customer satisfaction – Customer relationships management – Customer acquisition, Retaining, Defection – Creating Long Term Loyalty Relationships.

Marketing Research and Data-Driven Decision Making

Marketing Information System – Marketing Research Process – Concepts and applications: Product – Advertising – Promotion – Consumer Behaviour – Retail research – Customer driven organizations - Cause related marketing – Ethics in marketing – Online marketing trends - social media and digital marketing.

Contemporary Trends and Ethical Marketing

Cause-Related and Sustainable Marketing – Ethical and Legal Aspects in Marketing – Green Marketing – Social Media Marketing – Influencer and Content Marketing – Mobile and Digital Marketing Trends – Personalization and Marketing Automation – Emerging Tools in Digital Marketing (SEO, SEM, Email, Analytics) – Customer-Centric Marketing Organizations.

References:

1. Philip Kotler & Kevin Lane Keller, Marketing Management, 16th Ed., Pearson, 2022
2. Paul Baines, Chris Fill, Kelly Page, Marketing, Oxford University Press, 6th Ed., 2023
3. V.S. Ramaswamy & S. Namakumari, Marketing Management: Global Perspective Indian Context, Macmillan, 7th Ed., 2023
4. Lamb, Hair, Sharma, McDaniel, Marketing: South Asian Perspective, Cengage Learning, 2012
5. K.S. Chandrasekar, Marketing Management – Text and Cases, Tata McGraw Hill, 2012
6. Rajan Saxena, Marketing Management, McGraw Hill Education, 6th Ed., 2023
7. Michael Solomon, Consumer Behavior: Buying, Having, and Being, Pearson, 14th Ed., 2023
8. Jean-Noël Kapferer, The New Strategic Brand Management, Kogan Page, 6th Ed., 2020

E-Resources:

- ❖ [HubSpot Academy – Digital Marketing](#)
- ❖ [Google Digital Garage – Fundamentals of Digital Marketing](#)
- ❖ [Think with Google – Consumer Insights](#)
- ❖ [Statista – Marketing Statistics](#)
- ❖ [HBR Marketing Resources](#)
- ❖ [Coursera – Marketing in a Digital World \(Illinois\)](#)

Course Outcomes

On successful completion of this course, students will be able to:

- **CO1:** Demonstrate conceptual knowledge of marketing fundamentals, strategic marketing, product and pricing decisions, consumer behavior, marketing research, and contemporary trends like digital and ethical marketing.
- **CO2:** Interpret and relate marketing concepts, environmental analysis, strategic marketing mix components, consumer behavior models, and marketing research processes to understand the dynamics of a market.

- **CO3:** Apply marketing principles to develop market segmentation, targeting, and positioning strategies; design product, pricing, and channel decisions; and create customer relationship management programs.
- **CO4:** Analyze the marketing environment, strategic marketing mix components, consumer and industrial buyer behavior, and marketing information systems to make data-driven decisions and develop effective marketing strategies.
- **CO5:** Evaluate the effectiveness of different marketing strategies, including product and pricing decisions, advertising campaigns, and digital marketing trends, to build a competitive and sustainable brand.
- **CO6:** Develop a comprehensive marketing strategy by integrating knowledge of marketing fundamentals, consumer behavior, market research, and emerging digital and ethical practices to achieve organizational goals.

Internal Assessment Methodology – Total: 100 Marks

Component	Weightage
Written Test I & II	60%
Assignment, Presentation, Case Study, Quiz, Simulation, Online Certification, Seminar, Mini project	40%

CO–PO–PSO Mapping Matrix:

CO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2
CO1	3	2	3	3	2	3	2
CO2	3	3	3	2	3	3	3
CO3	3	2	3	3	2	2	3
CO4	3	3	3	2	3	3	2
CO5	2	3	3	3	3	3	3
CO6	3	3	2	3	3	3	3

Note: 1 – Low, 2 – Medium, 3 – High

Course Objectives:

This course provides a holistic understanding of operations management as a vital function in achieving strategic and operational excellence in organizations. It covers tools, techniques, and strategies to design, plan, control, and improve manufacturing and service operations. Emphasis is placed on capacity planning, product design, supply chain strategies, quality management, and lean operations. Students will explore recent trends including digital operations, sustainable practices, and data-driven decision-making to gain competitive advantage in the global market.

Overview of Operations Management and Strategic Alignment

Operations Management – Nature, Importance, historical development, transformation processes, differences between services and goods, a system perspective, functions, challenges, current priorities, recent trends. Operations Strategy – Strategic fit, framework. Productivity; World-class manufacturing practices

Capacity, Facility and Supply Chain Decisions

Capacity Planning – Long range, Types, Developing capacity alternatives, tools for capacity planning. Facility Location – Theories, Steps in Selection, Location Models. Sourcing and procurement - Strategic sourcing, make or buy decision, procurement process, managing vendors.

Process, Product and Layout Design

Product Design - Criteria, Approaches. Product development process - stage-gate approach - tools for efficient development. Process - design, strategy, types, analysis. Facility Layout – Principles, Types, Planning tools and techniques – Service blueprinting – Role of design in lean and agile systems.

Forecasting, Resource and Inventory Planning

Demand Forecasting – Need, Types, OBJECTIVE and Steps - Overview of Qualitative and Quantitative methods. Operations planning - Resource planning - Inventory Planning and Control. Operations Scheduling - Theory of constraints - bottlenecks, capacity constrained resources, synchronous manufacturing

Quality Management and Lean Thinking

Definitions of quality, The Quality revolution, quality gurus; TQM philosophies; Quality management tools, certification and awards. Lean Management - philosophy, elements of JIT manufacturing, continuous improvement. Six sigma and DMAIC methodology.

Emerging Trends in Operations Management

Digital transformation in operations – Industry 4.0 and smart factories – Sustainable operations and green manufacturing – Service operations and scalability – Operations analytics – Blockchain in supply chains – Resilience and risk mitigation – Global operations strategy – Case studies on Indian and global practices.

References:

1. Richard B. Chase, Ravi Shankar, F. Robert Jacobs, Operations and Supply Chain Management, McGraw Hill, 17th Ed., 2023
2. B. Mahadevan, Operations Management: Theory and Practice, Pearson, 4th Ed., 2018
3. William J. Stevenson, Operations Management, McGraw Hill, 14th Ed., 2022
4. Cecil C. Bozarth & Robert B. Handfield, Introduction to Operations and Supply Chain Management, Pearson, 5th Ed., 2023
5. Norman Gaither & Gregory Frazier, Operations Management, Cengage, 11th Ed., 2022
6. R. Paneerselvam, Production and Operations Management, PHI Learning, 3rd Ed., 2017
7. Nigel Slack, Operations Management, Pearson, 10th Ed., 2023
8. S. Chopra & P. Meindl, Supply Chain Management: Strategy, Planning, and Operation, Pearson, 8th Ed., 2024
9. Russel & Taylor, Operations Management, Wiley, 11th Ed., 2022

E-Resources:

- ❖ MIT OpenCourseWare – Operations Management
- ❖ [Coursera – Operations Management by Wharton](#)
- ❖ [LinkedIn Learning – Operations Strategy](#)
- ❖ [ASQ – American Society for Quality](#)
- ❖ [Harvard Business Review – Operations Insights](#)

Course Outcomes

After completing this course, students will be able to:

- **CO1:** Demonstrate conceptual knowledge of operations management, operations strategy, capacity planning, supply chain decisions, product and process design, forecasting, quality management, lean thinking, and emerging trends like Industry 4.0 and sustainability.
- **CO2:** Interpret and relate the principles of operations management, capacity planning, supply chain strategies, product and process design, forecasting techniques, TQM, lean manufacturing, and the impact of digital and sustainable practices on operational excellence.
- **CO3:** Apply operational management tools and techniques, including capacity and location models, product and process design methods, forecasting models, and quality management tools, to solve real-world business problems.

- **CO4:** Analyze operations strategies, facility layouts, supply chain decisions, demand forecasts, and quality management systems to evaluate operational efficiency and identify areas for improvement.
- **CO5:** Evaluate various operational strategies, including capacity planning and sourcing, process and product design, forecasting methods, and quality management philosophies, to make informed decisions for achieving competitive advantage.
- **CO6:** Develop contemporary operations strategies by integrating knowledge of operations management, supply chain, design, forecasting, quality, and emerging trends to foster sustainable and resilient operations in a global market.

Internal Assessment (Total: 100 Marks)

Component	Weightage
Written Test I & II	60%
Assignment, Presentation, Case Study, Quiz, Simulation, Online Certification, Seminar, Mini project	40%

CO–PO–PSO Mapping Matrix:

CO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2
CO1	3	2	3	3	2	2	2
CO2	3	3	3	2	3	3	2
CO3	3	2	3	3	3	2	3
CO4	3	3	3	2	3	3	3
CO5	3	3	3	3	2	3	2
CO6	3	3	3	3	3	3	3

Note: 1 – Low, 2 – Medium, 3 – High

Course Objectives:

This course aims to equip students with a foundational and advanced understanding of predictive analytics, including its role in business decision-making. The course introduces key concepts in regression, classification, ensemble learning, clustering, association rules, and neural networks. Students will learn to use tools such as R, Python, TensorFlow, and Scikit-learn to develop predictive models and interpret outputs using business use cases. Emphasis is placed on hands-on model evaluation and validation, enabling learners to apply analytics-driven insights in real-world business scenarios.

Fundamentals of Predictive Analytics and Statistical Foundation

Introduction -Overview of Analytics and Predictive Analytics - Applications of Predictive Analytics in Business -Predictive Analytics Software (e.g., R, Python, SAS)- Supervised and Unsupervised Learning - Overview of Learning Types: Supervised vs. Unsupervised Introduction to Regression Models – Introduction to Classification Models - Basic Statistical Tools for Prediction - Descriptive Statistics, Inferential Statistics, Basic Statistical Techniques for Predictive Modeling

Regression and Basic Classification Models

Regression Analysis - Simple and Multiple Regression, Iterative Regression Techniques - Classification Models - K-Nearest Neighbors (KNN) - Evaluation Techniques for Classification (Confusion Matrix, ROC Curve) - Model Evaluation & Validation - Metrics for Model Evaluation: MSE, Accuracy, Precision, Recall - Techniques for Model Validation

Ensemble Learning and Advanced Predictive Models

Ensemble Models - Overview of Ensemble Learning- Bagging and Boosting Techniques Bootstrapping - Introduction to Bootstrapping - Applications and Method-Advanced Classification Techniques - In-depth Study of Advanced Classification Models

Clustering and Association Rule Mining

Clustering Techniques - Introduction to Clustering - K-Means Clustering, Hierarchical Clustering - Association Models - Association Rules, Market Basket Analysis, Algorithms for Association Rules (e.g., Apriori, FP-Growth)

Neural Networks and Deep Learning

Introduction to Neural Networks - Basics of Neural Networks, Multi-Layer Perceptrons (MLP) - Introduction to Deep Learning - Overview of Deep Learning, Basic Deep Learning Architectures - Applications of Deep Learning - Use Cases and Real-world Applications, Tools and Libraries for Deep Learning (e.g., Tensor Flow,

Keras) - Review and Case studies, Comprehensive Review of Key Concepts - Case Studies

Case Studies, Review and Emerging Trends

Comprehensive review of all predictive techniques – Case Studies: Retail, Finance, Marketing, and Healthcare – Responsible AI and Ethical Considerations in Predictive Modeling – Explainable AI – Role of predictive analytics in Industry 4.0 – Latest Trends in Business Predictive Modeling – Capstone Use Case.

References :

1. Dursun Delen, Predictive Analytics: Data Mining, Machine Learning and Data Science for Practitioners, 3rd Ed., Pearson, 2024
2. Trevor Hastie, Robert Tibshirani, Jerome Friedman, The Elements of Statistical Learning, 2nd Ed., Springer, 2017
3. Ian Goodfellow, Yoshua Bengio, Aaron Courville, Deep Learning, MIT Press, 2016
4. Aurélien Géron, Hands-On Machine Learning with Scikit-Learn, Keras, and TensorFlow, 3rd Ed., O'Reilly Media, 2022
5. John Fox, Applied Regression Analysis and Generalized Linear Models, 4th Ed., Sage, 2024
6. Christopher M. Bishop, Pattern Recognition and Machine Learning, Springer, 2006
7. Zhi-Hua Zhou, Ensemble Methods: Foundations and Algorithms, Chapman and Hall/CRC, 2012
8. Michael Nielsen, Neural Networks and Deep Learning, Determination Press, 2015
9. David R. Anderson, Statistical Methods for Business and Economics, 14th Ed., Cengage Learning, 2024
10. Ian Witten, Eibe Frank, Mark Hall, Data Mining: Practical Machine Learning Tools and Techniques, 4th Ed., Elsevier, 2016
11. Trevor Hastie, Robert Tibshirani, Jerome Friedman, The Elements of Statistical Learning, 2nd Ed., Springer, 2017

E-Resources:

- ❖ Google AI – Learn with Google AI
- ❖ Kaggle – Predictive Modeling Datasets & Tutorials
- ❖ TensorFlow Tutorials
- ❖ Scikit-learn Documentation
- ❖ Analytics Vidhya – Business Use Cases
- ❖ Coursera – Applied Data Science with Python (UMich)

Course Outcomes

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

- **CO1: Demonstrate** conceptual knowledge of the fundamentals of predictive analytics and statistical foundations, regression and classification models, ensemble learning, clustering and association rule mining, neural networks and deep learning, and emerging trends and ethical considerations in business.
- **CO2: Interpret** and **relate** to the different types of predictive models (supervised and unsupervised), regression and classification techniques, ensemble learning methods, clustering and association rules, deep learning architectures, and the outcomes of real-world case studies for business decisions.
- **CO3: Apply** theories and concepts of predictive analytics, regression, and classification to business problems, utilize advanced ensemble and clustering techniques, implement neural networks and deep learning, and integrate these models to solve real-world industry use cases.
- **CO4: Analyze** predictive analytics methodologies, including regression and classification models, advanced ensemble and clustering techniques, neural network architectures, and the role of emerging trends and explainable AI in organizational settings.
- **CO5: Evaluate** the theories and performance of various predictive models, including regression, classification, ensemble learning, clustering algorithms, and neural networks, to build models for enhancing business decision-making across different domains.
- **CO6: Develop** contemporary practices, **adapt** and **modify** predictive models and techniques related to statistical foundations, regression, ensemble learning, clustering, neural networks, and deep learning to suit real-world business use cases and address ethical considerations in the field.

Internal Assessment Methodology (100 Marks)

Component	Weightage
Written Test I & II	60%
Assignment, Presentation, Case Study, Quiz, Simulation, Online Certification, Seminar, Mini project	40%

CO–PO–PSO Mapping Matrix:

CO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2
CO1	3	3	2	2	3	3	3

CO2	3	3	3	3	2	3	3
CO3	3	2	3	3	3	3	3
CO4	3	2	3	3	2	3	2
CO5	2	3	3	3	3	3	3
CO6	3	3	3	2	3	3	3

Note: 1 – Low, 2 – Medium, 3 – High

MB25C08 Business Research Methods

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Course Objectives:

This course aims to develop a research-oriented mindset by imparting the principles and practices of scientific Business research. It enables students to systematically approach real-world Business problems using exploratory, descriptive, and causal research designs. Emphasis is placed on quantitative and qualitative research techniques, instrument design, statistical analysis using software tools, and ethical report writing. The course also trains students to critically evaluate research studies and independently prepare Business research reports for data-driven decision-making.

Foundations of Business Research and Scientific Inquiry

Business Research – Definition and Significance – the research process – Types of Research – Exploratory and causal Research – Theoretical and empirical Research – Cross –Sectional and time – series Research – Research questions / Problems – Research objectives – Research hypotheses – characteristics – Research in an evolutionary perspective – the role of theory in research.

Research Design and Measurement Techniques

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 – Variables in Research – Measurement and scaling – Different scales – Construction of instrument – Validity and Reliability of instrument.

Data Collection Methods and Sampling Techniques

Types of data – Primary Vs Secondary data – Methods of primary data collection – Survey Vs Observation – Experiments – Construction of questionnaire and instrument – Types of Validity – Sampling plan – Sample size – determinants optimal sample size – sampling techniques – Sampling methods.

Data Preparation and Analytical Techniques

Data Preparation – editing – Coding –Data entry – Validity of data – Qualitative Vs Quantitative data analyses – Applications of Bivariate and Multivariate statistical techniques, Factor analysis, Discriminant analysis, Cluster analysis, Multiple regression and Correlation, Multidimensional scaling – Conjoint Analysis – Application of statistical software for data analysis.

Report Writing and Research Communication

Research report –Types – Contents of report – need for executive summary – chapterization – contents of chapter – report writing – the role of audience – readability – comprehension – tone – final proof – report format – title of the report – ethics in research – Ethics in research – Subjectivity and Objectivity in research.

Integrity and Trends in Business Research

Research Integrity – Emerging Trends: Digital Surveys, AI in Research, Online Panels, Real-Time Analytics – Case Studies on Ethical Dilemmas in Research.

References:

1. Donald R. Cooper, Pamela S. Schindler, J.K. Sharma, Business Research Methods, McGraw Hill, 13th Ed., 2021
2. Uma Sekaran & Roger Bougie, Research Methods for Business: A Skill Building Approach, Wiley, 7th Ed., 2020
3. William G. Zikmund et al., Business Research Methods – South Asian Perspective, Cengage, 9th Ed., 2018
4. Alan Bryman & Emma Bell, Business Research Methods, Oxford University Press, 5th Ed., 2019
5. R. Paneerselvam, Research Methodology, PHI Learning, 2nd Ed., 2015
6. Mark Saunders, Philip Lewis, Adrian Thornhill, Research Methods for Business Students, Pearson, 8th Ed., 2022
7. Davis Bunn & Jennie Tranter, Business Research and Statistics Using Excel, Wiley, 1st Ed., 2021

E-Resources:

- ❖ [Harvard Business Review – Research Insights](#)
- ❖ [SAGE Research Methods Library](#)
- ❖ [Elsevier – Researcher Academy](#)
- ❖ [StatSoft Textbook – Statistics and Analytics](#)
- ❖ [Coursera – Data-Driven Decision Making \(PwC\)](#)
- ❖ [Google Forms & SurveyMonkey – Data Collection Tools](#)

Course Outcomes

After completing this course, students will be able to:

- **CO1:** Demonstrate conceptual knowledge of the research process, various research designs, data collection methods, analytical techniques, report writing, and emerging trends and ethical considerations in business research.
- **CO2:** Interpret and relate research questions and objectives to appropriate research designs, measurement scales, sampling techniques, and data analysis methods for conducting scientific inquiry.
- **CO3:** Apply research design principles, instrument construction, data collection methods, and statistical software to collect, prepare, and analyze both qualitative and quantitative data.

- **CO4:** Analyze the validity and reliability of research instruments, the outcomes of bivariate and multivariate statistical analyses, and the ethical implications of a research project to derive meaningful insights and conclusions.
- **CO5:** Evaluate different research methodologies, data analysis techniques, and ethical dilemmas in business research to ensure the integrity, objectivity, and reliability of research findings.
- **CO6:** Develop a comprehensive, ethically sound business research report by integrating knowledge of research design, data collection, analytical methods, and emerging technologies to support data-driven managerial decision-making.

Internal Assessment Methodology – 100 Marks

Component	Weightage
Written Test I & II	60%
Assignment, Presentation, Case Study, Quiz, Simulation, Online Certification, Seminar, Mini project	40%

CO–PO–PSO Mapping Matrix:

CO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2
CO1	3	3	2	3	2	3	2
CO2	3	3	3	3	3	3	3
CO3	3	2	3	3	2	3	3
CO4	3	3	3	3	3	3	2
CO5	3	3	3	2	2	2	3
CO6	2	3	3	3	3	3	3

Note: 1 – Low, 2 – Medium, 3 – High

Course Objectives:

This course equips students with analytical and quantitative tools essential for modeling and solving complex Business problems. It emphasizes linear programming, decision theory, inventory models, queuing systems, and simulation techniques, enabling data-driven decision-making in logistics, finance, operations, and project management. Learners will gain proficiency in applying optimization and statistical modeling techniques using spreadsheet-based tools and modern software applications. The course prepares students to assess real-time scenarios with practical, strategic, and computational approaches to decision-making.

Introduction to Quantitative Decision Models

Relevance of quantitative techniques in management decision making. Linear Programming formulation, solution by graphical and simplex methods (Primal - Penalty, Two Phase), Special cases. Sensitivity Analysis. **(Theory and Problem)**

Extensions of Linear Programming – Transportation & Assignment (Problems)

Transportation Models (Minimising and Maximising Problems) – Balanced and unbalanced Problems – Initial Basic feasible solution by N-W Corner Rule, Least cost and Vogel's approximation methods. Check for optimality. Solution by MODI / Stepping Stone method. Case of Degeneracy. Transshipment Models. Assignment Models (Minimising and Maximising Problems) – Balanced and Unbalanced Problems. Solution by Hungarian and Branch and Bound Algorithms. Travelling Salesman problem. Crew Assignment Models.

Decision Theory and Game Theory Applications (Theory and Problem)

Decision making under risk – Decision trees – Decision making under uncertainty. Game Theory-Two-person Zero sum games-Saddle point, Dominance Rule, Convex Linear Combination (Averages), methods of matrices, graphical and LP solutions.

Inventory Control and Replacement Models (Theory and Problem)

Inventory Models – EOQ and EBQ Models (With and without shortages), Quantity Discount Models. Replacement Models-Individual replacement Models (With and without time value of money) – Group Replacement Models.

Queuing Models and Monte Carlo Simulation (Problem)

Queuing Theory - single and multi-channel models – infinite number of customers and infinite callingsource. Monte Carlo simulation – use of random numbers, application of simulation techniques

Emerging Trends and Tools for Quantitative Decision-Making

(Theory and Problem)

Integration of quantitative techniques in Business analytics – Use of Excel Solver, R, and Python in operations research – Introduction to prescriptive analytics.

References:

1. Hamdy A. Taha, Operations Research: An Introduction, 11th Ed., Pearson Education, 2022
2. G. Srinivasan, Operations Research: Principles and Applications, PHI Learning, 2nd Ed., 2011
3. N. D. Vohra, Quantitative Techniques in Management, Tata McGraw Hill, 2010
4. R. Paneerselvam, Operations Research, PHI Learning, 4th Ed., 2018
5. Frederick Hillier & Mark Hillier, Introduction to Management Science, McGraw Hill India, 6th Ed., 2023
6. Bernard W. Taylor III, Introduction to Management Science, Pearson, 9th Ed., 2020
7. S. Kalavathy, Operations Research, Vikas Publishing House, 4th Ed., 2022
8. Nagraj B., Barry R. & Ralph M. S. Jr., Managerial Decision Modelling with Spreadsheets, Pearson Education, 2nd Ed., 2007

E-Resources:

- ❖ MIT OpenCourseWare – Operations Research
- ❖ OR-Tools by Google
- ❖ Analytics Vidhya – Decision Science Tutorials
- ❖ [Coursera – Business Analytics: Decision Making Using Data \(Wharton\)](#)
- ❖ [Khan Academy – Linear Programming and Optimization](#)
- ❖ YouTube – Prof. G. Srinivasan's NPTEL Operations Research Series

Course Outcomes

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

- **CO1:** Demonstrate conceptual knowledge of quantitative decision models, linear programming, transportation and assignment problems, decision theory, game theory, inventory control, replacement models, queuing systems, simulation, and emerging trends and software tools.
- **CO2:** Interpret and relate the principles of linear programming, transportation and assignment models, decision theory, game theory, inventory and replacement models, queuing theory, and simulation to identify and frame business problems.

- **CO3:** Apply analytical and quantitative tools, including linear programming, transportation and assignment methods, decision trees, inventory models, and queuing theory, to solve complex business problems.
- **CO4:** Analyze business problems across different domains, such as logistics, operations, and project management, using techniques like linear programming, game theory, inventory models, and simulation to assess alternative solutions and their impacts.
- **CO5:** Evaluate the effectiveness of various operations research techniques, including transportation and assignment models, decision theory, and queuing models, to make informed and optimal decisions under real-world constraints and uncertainties.
- **CO6:** Develop data-driven solutions and strategic recommendations by integrating knowledge of linear programming, inventory management, queuing theory, and simulation, and utilizing modern software tools to solve complex managerial decision problems.

Internal Assessment Methodology – 100 Marks

Component	Weightage
Written Test I & II	60%
Assignment, Presentation, Case Study, Quiz, Simulation, Online Certification, Seminar, Mini project	40%

CO–PO–PSO Mapping Matrix:

CO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2
CO1	3	3	3	3	3	3	2
CO2	3	2	3	2	2	3	3
CO3	3	3	2	2	3	2	2
CO4	3	3	3	3	2	3	3
CO5	3	3	3	3	3	3	2
CO6	3	3	3	3	3	3	3

Note: 1 – Low, 2 – Medium, 3 – High

MB25C06	Entrepreneurship Development	L	T	P	C
		3	0	0	3
Course Objectives: This course aims to equip the knowledge and skills to identify entrepreneurial opportunities, develop a comprehensive business plan, and manage the lifecycle of a startup, from launch to sustainable growth. It integrates theoretical frameworks with practical applications of the entrepreneurial ecosystem and ethical business practices.					
Entrepreneurial Mindset and Competencies: Entrepreneurship concept – Entrepreneurship as a Career – Entrepreneurial Personality - Characteristics of Successful Entrepreneurs – Knowledge and Skills of an Entrepreneur.					
Entrepreneurial Ecosystem and Policy Support: Entrepreneurial Environment – Role of Family, Society and Culture – Government Industrial Policies – State and Central Schemes (Startup India, Stand-Up India, PMEGP, MSME) – Role of DICs, SIDBI, EDII, TBI, DST, NSIC – Role of Industry Associations and Support Services – Incubation Centers and Accelerators – International Policy Ecosystem (Global Innovation Index, GEM).					
Opportunity Identification and Business Planning: Sources of Product for Business - Prefeasibility Study - Criteria for Selection of Product - Ownership - Capital Budgeting- Project Profile Preparation - Matching Entrepreneur with the Project - Feasibility Report Preparation and Evaluation Criteria.					
Launching the Startup and Funding Mechanisms: Finance and Human Resource Mobilisation - Operations Planning - Market and Channel Selection -Growth Strategies - Product Launching – Incubation, Venture capital, Start-ups.					
Managing and Scaling the Business: Small Business Operations – Inventory, Finance, and People Management – Customer Acquisition and Retention – Digital Tools for Small business – Measuring Business Performance – Managing Uncertainty and Change – Business Model Innovation – Lean Startup Strategy – Scaling Frameworks – Case Studies on Growth-Oriented Startups.					
Business Sustainability, Exit Strategies, and Ethics: Monitoring and Evaluation of Business - Business Sickness - Prevention and Rehabilitation of Business Units - Effective Management of small Business - Case Studies.					
References: <ol style="list-style-type: none"> 1. Khanka, S. S. (2020). Entrepreneurial development (Rev. ed.). S. Chand & Company Ltd. 2. Hisrich, R. D., Peters, M. P., & Shepherd, D. A. (2024). Entrepreneurship (12th ed.). McGraw Hill. 3. Roy, R. (2020). Entrepreneurship (3rd ed.). Oxford University Press. 4. Kumar, A. (2012). Entrepreneurship. Pearson Education. 5. Chandra, P. (2023). Projects – Planning, analysis, selection, implementation and review (10th ed.). Tata McGraw Hill. 6. Murthy, N., & Tata, R. Biographical and interview compilations. 					
E-Resources: <ol style="list-style-type: none"> 1. Startup India Portal https://www.startupindia.gov.in/ 2. YourStory https://yourstory.com/ 					

Course Outcomes

After completing the course, students will be able to:

- **CO1:** Demonstrate conceptual knowledge of entrepreneurial mindset and competencies, the entrepreneurial ecosystem, opportunity identification, business planning, startup funding, operations management, and business sustainability and ethics.
- **CO2:** Interpret and relate the characteristics of successful entrepreneurs, government policies, business planning processes, funding mechanisms, operational strategies, and business sustainability frameworks to identify and evaluate entrepreneurial opportunities.
- **CO3:** Apply entrepreneurial competencies, government schemes, business planning tools, resource mobilization strategies, and operational management principles to launch and manage a new venture.
- **CO4:** Analyze business opportunities, the entrepreneurial ecosystem, business plans, growth strategies, and sustainability frameworks to make informed decisions about venture creation and management.
- **CO5:** Evaluate different business models, funding mechanisms, operational strategies, and exit plans to ensure the growth, sustainability, and ethical conduct of a new enterprise.
- **CO6:** Develop a comprehensive business plan by integrating knowledge of entrepreneurial principles, policy support, opportunity analysis, funding, operations, and sustainability to create a successful and socially responsible venture.

Internal Assessment Methodology – 100 Marks

Component	Weightage
Written Test I & II	60%
Assignment, Presentation, Case Study, Quiz, Simulation, Online Certification, Seminar, Mini project	40%

CO-PO-PSO Mapping Matrix:

CO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2
CO1	3	3	3	2	2	3	3
CO2	3	3	3	3	2	2	3
CO3	3	3	3	3	3	3	2
CO4	3	2	3	3	3	3	3
CO5	3	2	3	3	2	3	2
CO6	2	3	3	2	3	3	3

Note: 1 – Low, 2 – Medium, 3 – High

Course Objectives:

This course enables students to apply practical data science skills using Python for real-world business analytics. It equips them with the ability to clean, manipulate, analyze, and visualize data for strategic insights. Students will gain hands-on experience with statistical and predictive modeling, time series forecasting, and clustering using modern libraries such as Pandas, NumPy, Scikit-learn, Matplotlib, and Seaborn. The course emphasizes project-based learning and integrates contemporary case studies across business functions.

Data Analysis Environment and Manipulation Techniques

Introduction to Business Analytics and Python, Overview of business analytics and its applications. Introduction to Python for data analysis. Setting up Python environment (Anaconda, Jupyter Notebooks). Data Manipulation with Pandas : Introduction to Pandas library for data manipulation. , Working with Series and Data Frames., Data cleaning and preprocessing techniques.

Descriptive and Inferential Statistics with NumPy and SciPy

Descriptive Statistics with NumPy , Introduction to NumPy library for numerical computing. Calculating descriptive statistics (mean, median, variance, etc.). Exploring data distributions. Data Visualization with Matplotlib, Introduction to Matplotlib library for data visualization. Creating line plots, scatter plots, histograms, and bar charts. Customizing plot aesthetics and adding annotations.

Data Visualization and Dashboarding

Inferential Statistics :- Hypothesis testing with Python (t-tests, chi-square tests). Confidence intervals and hypothesis testing for proportions. Introduction to ANOVA for comparing means across groups. Predictive Modeling with Scikit-learn, Introduction to machine learning with Scikit-learn. ,Building and evaluating predictive models (linear regression, logistic regression). Model selection and hyper parameter tuning.

Supervised Learning with Scikit-learn

Time Series Analysis - Introduction to time series data., Exploratory data analysis for time series. Building time series forecasting models (ARIMA, Exponential Smoothing). Real-world case studies applying business analytics techniques with Python.

Advanced Predictive Modeling and Time Series Analysis

Advanced Predictive Modeling, Introduction to decision trees and ensemble methods (Random Forest, Gradient Boosting). Evaluating model performance (cross - validation, ROC curves, AUC)., Introduction to feature engineering and selection.

Clustering and Capstone Business Application

Unsupervised Learning – K-Means and Hierarchical Clustering – Evaluation using Silhouette Score – Real- world Business Use Cases – Final Mini Project: From Data Collection to Dashboard – Case Presentation – GitHub/Google Colab Submission.

List of exercises:

Data Manipulation with Pandas:

- ❖ Load a dataset into a Pandas Data Frame and inspect its structure.
- ❖ Perform basic data manipulation tasks such as selecting columns, filtering rows, and sorting data.
- ❖ Handle missing values by imputing or removing them from the dataset.

Descriptive Statistics with NumPy:

- ❖ Calculate descriptive statistics (mean, median, mode, variance, standard deviation) for numerical variables using NumPy.
- ❖ Explore data distributions and visualize them using histograms or density plots.

Data Visualization with Matplotlib:

- ❖ Create basic line plots, scatter plots, and bar charts to visualize relationships between variables.
- ❖ Customize plot aesthetics such as colors, labels, and titles.
- ❖ Generate subplots and combine multiple plots into a single figure.

Inferential Statistics with SciPy:

- ❖ Conduct hypothesis testing (t-tests, chi-square tests) to make inferences about population parameters.
- ❖ Calculate confidence intervals to estimate the range of plausible values for a population parameter.
- ❖ Perform correlation analysis to explore relationships between variables.

Predictive Modeling with Scikit-learn:

- ❖ Split the dataset into training and testing sets for model evaluation.
- ❖ Build and evaluate predictive models using linear regression, logistic regression, and decision trees.
- ❖ Apply cross-validation techniques to assess model performance and generalization.

Feature Engineering and Selection:

- ❖ Create new features by transforming existing variables (e.g., polynomial features, logarithmic transformations).
- ❖ Select relevant features using techniques such as correlation analysis, feature importance, or recursive feature elimination.

Time Series Analysis:

- ❖ Convert a dataset into a time series format and visualize temporal patterns.
- ❖ Apply time series decomposition to separate trend, seasonality, and noise components.
- ❖ Build and evaluate time series forecasting models (e.g., ARIMA, Exponential Smoothing).

Clustering Analysis with Scikit-learn:

- ❖ Explore unsupervised learning techniques such as K-means clustering to identify natural groupings in the data.
- ❖ Visualize clustering results using scatter plots or heat maps.
- ❖ Evaluate clustering performance using metrics such as silhouette score or Davies - Bouldin index.
- ❖ Implement unsupervised learning techniques and visualize business analytics results.

References:

1. Eric Matthes, "Python Crash Course, A Hands-on Project-Based Introduction to Programming", 3rd Edition, No Starch Press, 2022
2. Allen B. Downey, "Think Python: How to Think like a Computer Scientist", 3rd Edition, O'Reilly Publishers, July 2024
3. Aurélien Géron, Hands-On Machine Learning with Scikit-Learn, Keras, and TensorFlow, O'Reilly Media, 3rd Edition, 2022
4. John V. Guttag, Introduction to Computation and Programming Using Python, MIT Press, 3rd Ed., 2021
5. Yuli Vasiliev, Python for Data Science Handbook, No Starch Press, 2022
6. Karl Beecher, "Computational Thinking: A Beginner's Guide to Problem Solving and Programming", 1st Edition, BCS Learning & Development Limited, 2017
7. Paul Deitel and Harvey Deitel, "Python for Programmers", Pearson Education, 2nd Edition, 2024
8. G. Venkatesh and Madhavan Mukund, "Computational Thinking: A Primer for Programmers and Data Scientists", 1st Edition, Notion Press, 2021

E-Resources:

- ❖ Kaggle Datasets and Competitions
- ❖ Google Colab Notebooks
- ❖ Scikit-learn Documentation
- ❖ Seaborn and Matplotlib Gallery
- ❖ Python for Data Science – IBM on Coursera
- ❖ Real Python – Python Tutorials
- ❖ Analytics Vidhya – Data Science Projects

Course Outcomes

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

- **CO1: Demonstrate** conceptual knowledge of Python for data analysis, descriptive and inferential statistics, data visualization and dashboarding, supervised and advanced predictive modeling, time series analysis, and clustering for business applications.
- **CO2: Interpret and relate** to Python-based data manipulation, descriptive and inferential statistics, data visualization techniques, predictive modeling with Scikit-learn, time series forecasting, and unsupervised learning methods like clustering.
- **CO3: Apply** the theories and concepts of Python for data cleaning, statistical analysis with NumPy and SciPy, data visualization with Matplotlib, supervised learning models, advanced predictive modeling, and clustering to solve real-world business analytics problems.
- **CO4: Analyze** methodologies for data manipulation with Pandas, descriptive and inferential statistics, data visualization and dashboarding, predictive and advanced modeling techniques, time series analysis, and clustering algorithms in various organizational settings.
- **CO5: Evaluate** the theories related to data analysis with Python, statistical modeling, data visualization, supervised and advanced predictive models, time series analysis, and clustering to build models for enhancing business decision-making.
- **CO6: Develop** contemporary practices, **adapt** and **modify** data analysis concepts related to Python, statistical and predictive modeling, time series analysis, and clustering to suit real-world business applications and capstone projects.

CO–PO–PSO Mapping Matrix:

CO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2
CO1	3	3	2	2	3	3	3
CO2	3	3	3	2	2	3	3
CO3	2	3	3	3	2	2	2
CO4	3	2	3	3	3	3	2
CO5	3	3	2	3	3	3	3
CO6	3	3	3	3	3	3	3

Note: 1 – Low, 2 – Medium, 3 – High

Course Objectives:

This course equips students with the creative, technical, and strategic skills to craft impactful content across social media platforms. It focuses on understanding audience behavior, selecting appropriate content formats, and using design tools like Canva to build visually engaging posts. Students learn to create platform-specific content, apply analytics to optimize performance, and use digital storytelling to engage followers. Emphasis is also placed on ethical content use, branding consistency, and building community through content.

Foundations of Social Media and Audience Insights

Overview of major social media platforms (Facebook, Instagram, Twitter, LinkedIn, TikTok, etc.) Importance of social media in modern marketing - Understanding audience demographics and behaviors

Content Planning, Copywriting, and Content Strategy

Defining content goals and objectives - Creating a content calendar - Identifying target audience and personas- Developing a brand voice and style guide.

Content Types and Formats - Understanding different content types (text, images, videos, stories, live streams, etc.) Best practices for each content type - Using multimedia to enhance engagement Writing for Social Media - Crafting compelling headlines and captions - Writing for different platforms - SEO and keyword strategies for social media.

Visual Content Creation Using Canva

Basics of graphic design - Tools for creating visual content (Canva, Adobe Spark, etc.) - Canva Introduction, Canva Pro & Free , Beginner Canva Hacks , Master Your Canva Workflow.

Social Media Design Lab with Canva

Inspirational Quote Graphics , Interactive Instagram Stories, Post Your Instagram Stories , Master Transparent Backgrounds , Create Instagram Highlights, Add Highlights to Your Profile , Captivating Carousels , GIFs & Memes ,Turn Yourself Into a GIF, Easy Instagram Reels , Plan Your Grid in Canva , GIFs & Memes , Easy Instagram Reels , Facebook Banners , LinkedIn Cover Story & Banner , YouTube Channel Banner , Clickable YouTube Thumbnails , Animated YouTube End Screens , YouTube Intro Video Social Media Video Ads Advanced Reel Tricks.

Canva for Business

Design Amazing eBooks ,Clickable & Fillable PDFs , Compress Images & PDFs, Impressive Business Cards , Animate Your Email Signature Powerful Presentations, Design a Simple Website , Make Stunning Mockups ,Add Flair to Your Desktop , Tips for creating eye-catching visuals

Content Management, Analytics & Community Engagement

Understanding metrics: reach, engagement, impressions, shares, saves, CTR – Tools: Meta Business Suite, Instagram Insights, YouTube Studio, Buffer – Campaign monitoring and A/B testing – Negative comment handling – Customer service in DMs – Social listening – Building and moderating communities – Crisis management.

Practical Exercises:

Video Content Creation:

Basics of video production, Tools for creating and editing videos Best practices for live streaming , Content Creation and User-Generated Content , Strategies for curating content , Encouraging and leveraging user- generated content Legal and ethical considerations.

Social media Analytics and Metrics:

Understanding social media metrics (engagement, reach, impressions, etc.) , Tools for tracking and analyzing performance , Using data to refine content strategy, Collaborating with influencers, Handling negative feedback and crises ,Building and nurturing an online community, Best practices for customer service on social media.

References:

1. Gary Vaynerchuk, *Crushing It!: How Great Entrepreneurs Build Their Business and Influence*, Harper Business, 2018
2. Jenn Herman, *Instagram for Dummies*, 2nd Ed., Wiley, 2022
3. Ann Handley, *Everybody Writes*, Harper Business, 2nd Edition, 2022
4. Joe Pulizzi, *Content Inc.*, McGraw Hill, Second Edition, 2021
5. Courtney Rose, *Social Media Content Creation (Canvas Mastery)*, UGC Creators Press, 2023
6. Sreehari Sreekumar, *Digital Marketing Made Simple*, Notion Press, 2025 Edition

E-Resources

- ❖ <https://www.canva.com/learn/> – Canva tutorials
- ❖ <https://later.com/blog/> – Instagram tips & content calendars
- ❖ <https://blog.hootsuite.com/> – Social strategy guides
- ❖ <https://creators.instagram.com/> – Instagram Creator Portal
- ❖ <https://www.socialmediaexaminer.com/> – Industry updates
- ❖ <https://www.buffer.com/> – Social analytics tools
- ❖ <https://sproutsocial.com/insights/> – Case studies and trends

Course Outcomes

Upon completion, students will be able to:

- **CO1: Demonstrate** conceptual knowledge of social media platforms and audience insights, content planning and strategy, visual content creation with Canva, advanced design using Canva, Canva for business applications, and content management and analytics.
- **CO2: Interpret and relate** to social media audience behaviors, content planning and copywriting, visual content creation principles, the functionality of Canva for design projects, using Canva for business, and social media metrics for community engagement.
- **CO3: Apply** the theories and concepts of social media platforms, content strategy, visual design with Canva, advanced Canva techniques, business-oriented content creation, and analytics tools to create and manage engaging content and build a community.
- **CO4: Analyze** methodologies for understanding social media audiences, creating content calendars and brand voice, visual content creation with Canva, platform-specific design, business applications of Canva, and content management and analytics in various business settings.
- **CO5: Evaluate** the theories related to social media platforms, content planning and copywriting, visual design, advanced Canva tools, business applications of Canva, and content management and analytics to build models for enhancing digital brand presence and community engagement.
- **CO6: Develop** contemporary practices, **adapt** and **modify** social media content creation concepts to all aspects of content, including audience insights, planning and strategy, visual design, business applications of Canva, and analytics, to suit different platforms and ethical considerations.

CO–PO–PSO Mapping Matrix:

CO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2
CO1	3	3	2	2	2	3	2
CO2	3	3	3	3	3	3	3
CO3	3	3	3	3	2	2	3
CO4	3	2	3	3	3	3	3
CO5	3	3	3	3	3	3	3
CO6	3	3	2	3	3	2	3

Note: 1 – Low, 2 – Medium, 3 – High