COURSE TITLE	**ANALYTICS FOR SERVICES**
COURSE CODE	**04BM0206**
COURSE CREDITS	**3**

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

1. Identify key metrics and performance indicators used in service analytics across industries.
2. Perform data collection, cleaning, and management on structured and unstructured service datasets.
3. Build predictive models to address service-related problems such as demand forecasting and customer churn.
4. Conduct sentiment analysis on customer feedback and use results for customer experience improvement.
5. Use optimization tools and visualization platforms to support evidence-based decision-making in service environments.

Pre-requisite of course:NA

Teaching and Examination Scheme

Theory Hours	Tutorial Hours	Practical Hours	ESE	IA	CSE	Viva	Term Work
3	0	0	0	30	20	50	0

Contents : Unit	Topics	Contact Hours
1	**Introduction to Service Analytics** Overview of service industries and characteristics of service operations using real-time dashboards, Introduction to analytics in service enhancement through visual reports, Mapping service processes and visualizing performance gaps (using Excel/Power BI), Case Study: Service quality analytics in a hospitality chain using performance dashboards	9
2	**Data Collection and Management in Services** Designing effective customer surveys using online tools, Collecting transactional and behavioral data through CRM logs, Data cleaning and preprocessing for service data (hands-on with Pandas/Excel), Handling unstructured data like reviews and chats (text formatting & storage), Software: Google Forms / SurveyMonkey, Excel, SQL, Python (Pandas) Case Study: CRM data integration and preprocessing at a telecom firm for service improvement	9

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Contents : Unit	Topics	Contact Hours
3	**Predictive Analytics in Service Operations** Forecasting service demand using historical datasets, Building customer churn prediction models with logistic regression or decision trees, Resource planning using what-if simulations and optimization tools (Excel Solver) Software: Python (Scikit-learn, Pandas), R, Excel Solver Case Study: Demand prediction and staff allocation at a healthcare facility	9
4	**Customer Experience and Sentiment Analysis** Extracting insights from NPS/CSAT scores and customer satisfaction surveys, Performing sentiment analysis on review data (using Python TextBlob/VADER), Creating personalized service strategies based on text mining outputs Software: Python (TextBlob, NLTK, Vader), RapidMiner, Excel Case Study: Customer sentiment analysis in an e-commerce platform to improve retention	9
5	**Strategic Decision Making and Optimization** Applying data-driven frameworks for service design and delivery, Service route and workforce optimization using Excel Solver or PuLP, Evaluating service analytics ROI with visual performance indicators Software: Excel Solver / OpenSolver, Python (PuLP), Tableau / Power BI Case Study: Route and resource optimization in logistics and delivery services	9
Total Hours		**45**

Textbook :

1 Service Management: Operations, Strategy, Information Technology (8th Edition), Fitzsimmons, J. A., & Fitzsimmons, M. J. , McGraw-Hill Education, 2023

2 Services Marketing: Text and Cases (3rd Edition), Nargundkar, R. , McGraw-Hill Education, 2021

References:

1 Services Marketing: Integrating Customer Focus Across the Firm (7th Edition), Services Marketing: Integrating Customer Focus Across the Firm (7th Edition), Zeithaml, V. A., Bitner, M. J., & Gremler, D. D., McGraw-Hill Education, 2017

Suggested Theory Distribution:

The suggested theory distribution as per Bloom's taxonomy is as follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process

Distribution of Theory for course delivery and evaluation					
Remember / Knowledge	**Understand**	**Apply**	**Analyze**	**Evaluate**	**Higher order Thinking / Creative**
0.00	0.00	25.00	30.00	25.00	20.00

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Instructional Method:

1 Lecture based learning, Discussions, Hands on experience and case studies.

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