



# GUJARAT TECHNOLOGICAL UNIVERSITY

Programme Name: Master of Engineering

Level: PG

Subject Code : ME03000091

Subject Name : Business Analytics

WEF Academic Year :	2024-25
Semester :	3
Category of the Course :	MOPEC-01

<b>Prerequisite :</b>	Nil
<b>Rationale :</b>	Nil

## Course Outcome :

After Completion of the Course, Student will be able to :

No	Course Outcomes	RBT Level*
01	Understand the concepts of Business Analytics, Business analytics process and method.	UN
02	Apply the ability to use technical skills in predictive and prescriptive modeling to support the business decision.	AP
03	Demonstrate the ability to think critically in making decisions based on data and deep analytics	AP
04	Analyze various applications of Business Analytics	AN
05	Evaluate different forecasting techniques and models and recent trends in data analytics.	EL

\*RM: Remember, UN: Understand, AP: Apply, AN: Analyze, EL: Evaluate, CR: Create

## Teaching and Examination Scheme :

Teaching Scheme			Total Credits	Assessment Pattern and Marks				Total Marks
L	T	PR	C	Theory		Practical		
				ESE (E)	PA(M)	ESE (V)	PA (I)	
3	0	0	3	70	30	0	0	100



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## Course Content :

Sr. No.	Course Content	No. of Hours	% of Weightage
1	<b>Unit-I: Business analytics:</b> Overview of Business Analytics, Scope of Business analytics, Business Analytics Process, Relationship of Business Analytics Process and organization, competitive advantages of Business Analytics. Statistical Tools: Statistical Notation, Descriptive Statistical methods, Review of probability distribution and data modelling, sampling and estimation methods overview	7	15
2	<b>Unit – II:</b> Trendiness and Regression Analysis: Modelling Relationships and Trends in Data, simple Linear Regression. Important Resources, Business Analytics Personnel, Data and models for Business analytics, problem-solving, Visualizing and Exploring Data, Business Analytics Technology	7	15
3	<b>Unit-III: Organization Structures of Business Analytics:</b> Team management, Management Issues, Designing Information Policy, Outsourcing, Ensuring Data Quality, Measuring the contribution of Business Analytics, Managing Changes. Descriptive Analytics, predictive analytics, predictive Modelling, Predictive analytics analysis, Data Mining, Data Mining Methodologies, Prescriptive analytics and its step in the business analytics Process, Prescriptive Modelling, and nonlinear Optimization	9	20
4	<b>Unit-IV:</b> Forecasting Models, Forecasting Models for Stationary Time Series, Forecasting Models for Time Series with a Linear Trend, Forecasting Time Series with Seasonality, Regression Forecasting with Casual Variables, Selecting Appropriate Forecasting Models. Monte Carlo Simulation and Risk Analysis: Monte Carle Simulation Using Analytic Solver Platform, New-Product Development Model, Newsvendor Model, Overbooking Model, Cash Budget Model	12	25
5	<b>Unit-V:</b> Applications of Business Analytics Overview of Business Analytics Applications: Financial Analytics - Marketing Analytics – HR Analytics - Supply Chain Analytics - Retail Industry - Sales Analytics - Web & Social MediaAnalyticsHealthcareAnalytics-EnergyAnalytics-TransportationAnalyticsLendingAnalytics –Sports Analytics-Future of Business Analytics.	10	25
	<b>Total</b>	<b>45</b>	<b>100</b>



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## Reference Book :

1. Business Analytics Principles, Concepts, and Applications by Marc J. Schniederjans, Dara G. Schniederjans, Christopher M. Starkey, Pearson FT Press
2. Business Analytics by James Evans, person Education

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