GUJARAT TECHNOLOGICAL UNIVERSITY

Master of Engineering
Semester – II
Subject Code: 3726309
Subject Name: Business Analytics

Type of course: Open Elective

Prerequisite:

Rationale:

Course Scheme:

Teaching Scheme			Total Credits	Assessment Pattern and Marks				Total Marks
				Theory		Practical		
L	T	PR	C	ESE (E)	PA(M)	ESE (V)	PA (I)	
03	00	00	03	70	30	00	00	100

Course Content:

Sr. No.	Course Content	No of Hours	% Weightage
1.	**Unit-I: Business analytics:** 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	6	15
2.	**Unit – II: 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	6	15
3.	**Unit-III: Organization Structures of Business Analytics:** 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.	8	20

4.	**Unit-IV:** 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.	**Unit-V: Decision Analysis:** Formulating Decision Problems, Decision Strategies with the without Outcome Probabilities, Decision Trees, The Value of Information, Utility and Decision Making	8	20
6.	**Unit-VI: Recent Trends in :** Embedded and collaborative business intelligence, Visual data recovery, Data Storytelling and Data journalism	2	5

Reference Books:

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

Course Outcome:

After Completion of the Course, Student will 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 modelling to support the business decision.	AP
03	Demonstrate the ability to think critically in making decisions based on data and deep analytics	AP
04	Analyse various decision problems and strategies.	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