



# GUJARAT TECHNOLOGICAL UNIVERSITY

Syllabus for Master of Business Administration (Part-Time), 3<sup>rd</sup> Semester

Subject Name: Business Analytics

Subject Code: 5539901

With effective  
from academic  
year 2022-23

## 1. Learning Outcomes:

Learning Outcome Component	Learning Outcome (Learner will be able to)
Business Environment and Domain Knowledge (BEDK)	<ul style="list-style-type: none"> <li>• <i>Develop</i> understanding of various information technologies and their application to facilitate business intelligence.</li> <li>• <i>Examine</i> the application of data analytics for a given business support function in a given industry.</li> </ul>
Critical thinking, Business Analysis, Problem Solving and Innovative Solutions (CBPI)	<ul style="list-style-type: none"> <li>• <i>Perform</i> a need assessment of a given business function and propose a framework for business reporting.</li> </ul>
Global Exposure and Cross-Cultural Understanding (GECCU)	<ul style="list-style-type: none"> <li>• <i>Analyze</i> the current global business analytics practices and <i>deduce</i> the applicability of these practices in providing solutions to organization problems / decision making requirements.</li> </ul>
Social Responsiveness and Ethics (SRE)	<ul style="list-style-type: none"> <li>• <i>Judge</i> the critical managerial and ethical issues in using business analytics.</li> </ul>
Effective Communication (EC)	<ul style="list-style-type: none"> <li>• <i>Evaluate</i> and communicate results of analysis and technical information to both technical and non-technical audiences through verbal, written and graphical reporting.</li> </ul>
Leadership and Teamwork (LT)	<ul style="list-style-type: none"> <li>• <i>Collaborate</i> with team members to design a framework for a given business problem using business analytics solutions.</li> </ul>

## LO – PO Mapping: Correlation Levels:

1 = Slight (Low); 2 = Moderate (Medium); 3 = Substantial (High), “-“= no correlation

Sub. Code: 5539901	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
LO1: <i>Develop</i> understanding of various information technologies and their <i>application</i> to facilitate business intelligence.	3	3	2	-	2	-	-	-	2
LO2: <i>Examine</i> the application of data analytics and related technological systems for a given business support function in a given industry.	3	3	2	-	2	2	-	2	2
LO3: <i>Perform</i> a need assessment of a given business function and	3	2	3	-	3	1	-	1	1



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<i>propose</i> a framework for business reporting.									
LO4: <i>Analyze</i> the current global business analytics practices and <i>deduce</i> the applicability of these practices in providing solutions to organization problems / decision making requirements.	2	3	3	-	3	1	-	1	2
LO5: <i>Judge</i> the critical managerial and ethical issues in using business analytics.	-	-	-	-	1	-	3	1	-
LO6: <i>Evaluate</i> and communicate results of analysis and technical information to both technical and non-technical audiences through verbal, written and graphical reporting.	-	2	3	3	-	1	2	-	-
LO7: <i>Collaborate</i> with team members to design a framework for a given business problem using business analytics solutions.	-	-	1	2	-	2	-	3	1

**2. Course Duration:** The course duration is of **40 sessions of 60 minutes each.**

**3. Course Contents:**

Module No:	Module Content	No. of Sessions	70 Marks (External Evaluation)
<b>I</b>	<b>Business Intelligence:</b> <ul style="list-style-type: none"> <li>• Definitions and Examples in Business Intelligence</li> <li>• Need, Features and Use of Business Intelligence (BI)</li> <li>• BI Components               <ul style="list-style-type: none"> <li>○ Data Warehouse</li> <li>○ Business Analytics</li> <li>○ Business Performance Management</li> <li>○ User Interface</li> </ul> </li> </ul>		



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	<b>Business Analytics:</b> <ul style="list-style-type: none"><li>• Introduction to Business Analytics (BA) – Need.</li><li>• Components (Business Context, Technology, Data Science).</li><li>• Types (Descriptive, Predictive and Prescriptive).</li><li>• Business Intelligence versus Business Analytics.</li><li>• Transaction Processing v/s Analytic Processing<ul style="list-style-type: none"><li>○ OLTP v/s OLAP</li><li>○ OLAP Operations</li><li>○ Data models for OLTP (ER model) and OLAP (Star &amp; Snowflake Schema)</li></ul></li></ul>	10	18
II	<b>Types of Digital Data:</b> <ul style="list-style-type: none"><li>• Definition, Sources, Storage and Characteristics of Structured, Unstructured and Semi Structured Data</li></ul> <b>Data Warehouse:</b> <ul style="list-style-type: none"><li>• Definition, characteristics, framework</li><li>• Data lake</li></ul> <b>Business Reporting, Visual Analytics:</b> <ul style="list-style-type: none"><li>• Definition, concepts</li><li>• Different types of charts and graphs</li></ul> Emergence of data visualization and visual analytics	10	18
III	<b>Data Mining:</b> <ul style="list-style-type: none"><li>• Concepts and applications</li><li>• Data mining process</li></ul> <b>Text &amp; Web Analytics:</b> <ul style="list-style-type: none"><li>• Text analytics and text mining overview</li><li>• Text mining applications</li><li>• Web mining overview</li><li>• Social media analytics</li><li>• Sentiment analysis overview</li></ul> <b>Big Data Analytics:</b> <ul style="list-style-type: none"><li>• Definition and characteristics of big data</li><li>• Fundamentals of big data analytics</li></ul>	10	17
IV	<b>Business Performance Management:</b> <ul style="list-style-type: none"><li>• Business performance management cycle</li><li>• KPI, Dashboard</li></ul> <b>Analytics in Business Support Functions:</b> <ul style="list-style-type: none"><li>• Sales &amp; Marketing Analytics</li><li>• HR Analytics</li><li>• Financial Analytics</li><li>• Production and operations analytics</li></ul> <b>Analytics in Industries:</b> <ul style="list-style-type: none"><li>• Telecom, Retail, Healthcare, Financial Services</li></ul>	10	17
V	<b>Practical:</b> <p>Groups comprising of a maximum of two students may be formed. They should apply Business Analytics in any organisation and subject domain. Following are few indicative topics (but are not restricted to):</p> <ul style="list-style-type: none"><li>• Sales Analytics, Customer Profitability Analytics,</li></ul>	---	(30 marks CEC)



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	Product Profitability Analytics, Warehousing Optimization <ul style="list-style-type: none"> <li>• Cash flow analytics, Revenue Analytics, Value driven Analytics, Shareholder Value Analytics, Decision Tree Analytics</li> <li>• Talent Analytics, Workforce Analytics, HR Metrics, Capability and Capacity Analytics, Corporate Culture Analytics, Analysis of managerial traits as predictors of success</li> <li>• Operational Analytics, Production Effectiveness, Quality Control Dashboard,</li> </ul>		
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#### 4. Pedagogy:

- ICT enabled Classroom teaching
- Case study
- Practical / live assignment
- Interactive class room discussions

#### 5. Evaluation:

Students shall be evaluated on the following components:

A	<b>Internal Evaluation</b>	<b>(Internal Assessment- 50 Marks)</b>
	• Continuous Evaluation Component	30 marks
	• Class Presence & Participation	10 marks
	• Quiz	10 marks
B	<b>Mid-Semester examination</b>	<b>(Internal Assessment-30 Marks)</b>
C	<b>End –Semester Examination</b>	<b>(External Assessment-70 Marks)</b>

#### 6. Reference Books:

No.	Author	Name of the Book	Publisher	Year of Publication / Edition
1	Ramesh Sharda, Dursun Delen, Efraim Turban	Business Intelligence: A Managerial Perspective on Analytics	Pearson	3 <sup>rd</sup>
2	R.N.Prasad and Seema Acharya	Fundamentals of Business Analytics	Wiley	2016
3	U. Dinesh Kumar	Business Analytics –The Science of Data Driven Decision Making	Wiley	2017
4	Anil Maheshwari	Data Analytics	McGraw Hill	2017
5	Jesper Thorlund & Gert H.N. Laursen	Business Analytics for Managers: Taking Business Intelligence Beyond	Wiley	Latest
6	Sahil Raj	Business Analytics	Cengage	Latest
7	James R. Evans	Business Analytics	Pearson	Latest

Note: Wherever the standard books are not available for the topic appropriate print and online resources, journals and books published by different authors may be prescribed.

#### 7. List of Journals / Periodicals / Magazines / Newspapers / Web resources, etc.

1. International Journal of Business Analytics
2. International Journal of Business Analytics and intelligence
3. International Journal on Consumer and Business Analytics
4. Analytics India – Magazine