Gyanmanjari Innovative University

Course Syllabus
Gyanmanjari Institute of Management Studies
Semester-4 (BBA)

Subject: Data Visualization- BBABA14314

Type of course: Major (Core)

Prerequisite:
Students should have basic understanding of statistics, data interpretation, and familiarity with spreadsheet software such as Microsoft Excel.

Rationale:
This course equips students with essential skills to visually analyze and present business data, enabling clearer insights and informed decision-making in a data-driven corporate environment.

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks			Total Marks
					CCE		
CI	T	P	C	SEE	MSE	ALA	
4	0	0	4	100	30	70	200

Legends: CI-Classroom Instructions; T – Tutorial; P - Practical; C – Credit; SEE - Semester End Evaluation; MSE- Mid Semester Examination; V – Viva; CCE-Continuous and Comprehensive Evaluation; ALA- Active Learning Activities.

4 Credits * 25 Marks = 100 Marks (each credit carries 25 Marks)
SEE 100 Marks will be converted in to 50 Marks
CCE 100 Marks will be converted in to 50 Marks
It is compulsory to pass in each individual component.

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Course Content:

Sr. No	Course content	Hrs.	% Weightage
1	**Introduction to Data Visualization in Business:** What is Data Visualization and why it matters in business? - Types of data: qualitative vs quantitative - Common charts and graphs used in business (bar, line, pie, scatter) - Basic principles of clear and effective visuals - Understanding your audience and purpose of visualization.	15	25
2	**Tools for Data Visualization:** Introduction to Microsoft Excel for creating charts and tables - Basics of Tableau and Power BI: dashboards and reports - Data cleaning basics for visualization - Hands-on practice: Building simple business reports and dashboards - Sharing and presenting your visual data.	15	25
3	**Advanced Visual Techniques for Business Insights:** Using maps, heatmaps, and bubble charts to represent complex data - best practices for choosing colors, labels, and layouts - Avoiding common mistakes that confuse or mislead - Interactive dashboards: why and how - Analyzing business cases using data visualization.	15	25
4	**Data Visualization for Decision Making:** How visuals support marketing, sales, and financial decisions - Designing KPI dashboards for business performance tracking - Storytelling with data: turning numbers into insights - Group project: Create a data visualization report on a business topic - Emerging trends and the future of business data visualization.	15	25

Continuous Assessment:

Sr. No	Active Learning Activities	Marks
1	**Data Cleaning and Visualization Exercise:** Students will be given a raw business dataset with errors and missing values. They clean the data using Excel or similar tools and create different charts to highlight key trends. Upload PDF on GMIU Web Portal.	10
2	**Dashboard Design Challenge:** Students will design a business dashboard showcasing important KPIs like sales or customer data using tools like Tableau or Excel. Upload PDF on GMIU Web Portal.	10
3	**Peer Review and Critique:** Students will exchange their visualizations and provide constructive feedback on clarity, design, and accuracy and prepare a report on it. Upload PDF on GMIU Web Portal.	10
4	**Storytelling with Data Presentation:** Student will analyze a business dataset and presents a brief data story, explaining insights through visuals. Upload PDF on GMIU Web Portal.	10
5	**Visualization Comparison Task:** Students will create two different types of visualizations for the same data and compare their effectiveness in a short report. Upload PDF on GMIU Web Portal.	10
6	**Interactive Visualization Exploration:** Students will explore an interactive online dashboard of their choice and reflect on how interactive features enhance understanding and engagement. Prepare a brief report. Upload PDF on GMIU Web Portal.	10
7	**Attendance**	10
Total		70

Suggested Specification table with Marks (Theory): 100

Distribution of Theory Marks (Revised Bloom's Taxonomy)						
Level	Remembrance (R)	Understanding (U)	Application (A)	Analyze (N)	Evaluate (E)	Create (C)
Weightage	30%	40%	10%	10%	10%	0%

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Course Outcome:

After learning the course, the students should be able to:	
CO1	Explain fundamental concepts and principles of data visualization in a business context.
CO2	Apply data visualization tools and techniques to create clear and effective business charts and dashboards.
CO3	Analyze and interpret business data through various visualization methods to support decision-making.
CO4	Evaluate the design and effectiveness of data visualizations for business communication.

Instructional Method:

The course delivery method will depend upon the requirement of content and the needs of students. The teacher, in addition to conventional teaching methods by black board, may also use any tools such as demonstration, role play, Quiz, brainstorming, MOOCs etc.

From the content 10% topics are suggested for flipped mode instruction. Students will use supplementary resources such as online videos, NPTEL/SWAYAM videos, e-courses. The internal evaluation will be done on the basis of Active Learning Assignment.

Practical/Viva examination will be conducted at the end of semester for evaluation of performance of students in the laboratory.

Reference Books:

[1] Few, S. (2012). Show me the numbers: Designing tables and graphs to enlighten (2nd ed.). Analytics Press.

[2] Knaflic, C. N. (2015). Storytelling with data: A data visualization guide for business professionals. Wiley.

[3] Yau, N. (2013). Data points: Visualization that means something. Wiley.

[4] McKinney, W. (2017). Python for data analysis: Data wrangling with pandas, NumPy, and IPython (2nd ed.). O'Reilly Media.

[5] Murray, S. (2017). Interactive data visualization for the web (2nd ed.). O'Reilly Media.