DATA VISUALIZATION

Course Code	23CS6501	Year	III	Semester	I
Course Category	HONORS	Branch	CSE	Course Type	Theory
Credits	3	L – T – P	3-0-0	Prerequisites	Probability & Statistics, Data Structures, Human-Computer Interaction, Computer Graphics
Continuous Evaluation:	30	Semester End Evaluation:	70	Total Marks:	100

Course Outcomes		
Upon successful completion of the course, the student will be able to:		
CO1	Apply visualization principles and tools to create effective dashboards for problem-solving and decision-making.	L3
CO2	Apply visualization frame works to design effective visualization applications.	L3
CO3	Apply group visualization models to visualize and analyze group structures.	L3
CO4	Apply appropriate methods to visualize Spatiotemporal and Collaborative Visualization Systems	L3

Syllabus

Unit No.	CONTENTS	Mapped CO
I	**Introduction**: What Is Visualization? History of Visualization, Relationship between Visualization and Other Fields the Visualization Process, Introduction of visual perception, visual representation of data, Gestalt principles, information overloads.	CO1
II	**Creating visual representations:** visualization reference model, visual mapping, visual analytics, Design of visualization applications.	CO1,CO2
III	**Classification of visualization systems:** Interaction and visualization techniques misleading, Visualization of one, two dimensional data and text	CO2
IV	**Visualization of groups**: trees, graphs, clusters, Metaphorical visualization	CO3
V	**Visualization of volumetric data**: vector fields, processes and simulations, Visualization of maps, Evaluating visualizations. **Recent trends** in various perception techniques, various visualization techniques.	CO4

Learning Resources
Text Books
1. WARD, GRINSTEIN, KEIM. Interactive Data Visualization: Foundations, Techniques, and Applications. Natick : A K Peters, Ltd. 2. E. Tufte, The Visual Display of Quantitative Information, Graphics Press
Reference Books
1. Tamara Munzner,Visualization Analysis & Design ,1st edition,AK Peters Visualization Series 2014 2. Scott Murray,Interactive Data Visualization for the Web ,2nd Edition, 2017
E-Resources & other digital material
1. https://kdd.cs.ksu.edu/Courses/CIS536/Lectures/Slides/Lecture-34-Main_6up.pdf