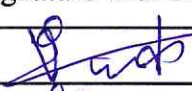
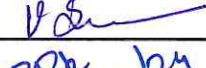
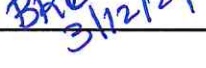


II	CO2: Classify the visualization systems	2.1	Classification of visualization systems	T1	2	Chalk & Board PPT
		2.2	Interaction and visualization techniques misleading	T1	2	
		2.3	Visualization of one, two and multi-dimensional data	T1	2	
		2.4	Text and Text documents.	T1	2	
	Content beyond syllabus	2.6	Data dashboards and real-time visualization systems	T1	1	
		Revision of UNIT-II			1	
Total					10	
UNIT-III: VISUALIZATION OF GROUPS						
III	CO3: Create visualization of groups	3.1	Visualization of groups	T1	2	Chalk & Board PPT
		3.2	Visualization of trees	T1	2	
		3.3	Visualization of graphs	T1	2	
		3.4	Visualization of clusters	T1	2	
		3.5	Visualization of networks	T1	1	
		3.6	Visualization of software	T1	1	
		3.4	Metaphorical visualization	T1	1	
	Content beyond syllabus	3.5	Radial and circular visualization techniques	R1	1	
		Revision of UNIT-III			1	
Total					13	
UNIT-IV: VISUALIZATION OF VOLUMETRIC DATA AND EVALUATION OF VISUALIZATIONS						
IV	CO4: Visualization of complex data	4.1	Visualization of volumetric data	T1	2	Chalk & Board PPT
		4.2	Vector fields	T1	2	
		4.3	processes and simulations	T1	2	
		4.4	Visualization of maps	T1	2	
		4.5	Visualization of geographic information	T1	1	
		4.6	Visualization of GIS systems	T1	1	
		4.7	collaborative visualizations	T1	1	
		4.8	Evaluating visualizations	T1	1	
	Content beyond syllabus	4.10	3D visualization techniques for scientific data	R1	1	
		Revision of UNIT-IV			1	
Total					14	
UNIT-V: EMERGING TRENDS AND DATA STRUCTURES						
V	CO5: Apply new techniques in data visualization	5.1	Recent trends in various perception techniques,	T2	2	Chalk & Board PPT
		5.2	Various visualization techniques	T2	2	
		5.3	Data structures used in data visualization.	T2	2	

	Content beyond syllabus	5.4	AI and machine learning in automated visualizations	R1	1	
		Revision of UNIT-V			1	
Total					8	
CUMULATIVE PROPOSED PERIODS					60	
Text Books:						
S. No.	AUTHORS, BOOK TITLE, EDITION, PUBLISHER, YEAR OF PUBLICATION					
T1	WARD, GRINSTEIN, KEIM,. Interactive Data Visualization: Foundations, Techniques, and Applications. Natick:AKPeters, Ltd, 2015					
T2	E.Tufte, The Visual Display of Quantitative Information, GraphicsPress, 2014					
Reference Books:						
S. No.	AUTHORS, BOOK TITLE, EDITION, PUBLISHER, YEAR OF PUBLICATION					
R1	Beautiful Visualization, Looking at Data Through the Eyes of Experts by Julie Steele, Noah Iliinsky, 2010					
R2	The Accidental Analyst: Show Your Data Who's Boss by Eileen and Stephen McDaniel, 2012					
Web Details:						
1	https://www.geeksforgeeks.org/data-visualization-and-its-importance/					
2	https://www.javatpoint.com/what-is-data-visualization					
3	https://www.kaggle.com/learn/data-visualization					
4	https://nptel.ac.in/courses/111106415					
5	https://elearn.nptel.ac.in/shop/iit-workshops/completed/data-visualization-with-r/					

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iii	Module Coordinator	V. Subrahmanyam	
iv	Program Coordinator	Dr.B. Rama Krishna	 BRK 3/12/24


Principal

