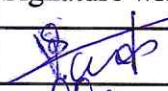
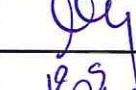
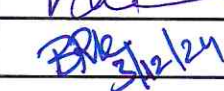




|                                                                            |                                                 |                      |                                                      |    |    |                   |
|----------------------------------------------------------------------------|-------------------------------------------------|----------------------|------------------------------------------------------|----|----|-------------------|
| 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                           | <a href="https://www.geeksforgeeks.org/data-visualization-and-its-importance/">https://www.geeksforgeeks.org/data-visualization-and-its-importance/</a>                             |                    |                                                     |    |    |  |
| 2                           | <a href="https://www.javatpoint.com/what-is-data-visualization">https://www.javatpoint.com/what-is-data-visualization</a>                                                           |                    |                                                     |    |    |  |
| 3                           | <a href="https://www.kaggle.com/learn/data-visualization">https://www.kaggle.com/learn/data-visualization</a>                                                                       |                    |                                                     |    |    |  |
| 4                           | <a href="https://nptel.ac.in/courses/111106415">https://nptel.ac.in/courses/111106415</a>                                                                                           |                    |                                                     |    |    |  |
| 5                           | <a href="https://elearn.nptel.ac.in/shop/iit-workshops/completed/data-visualization-with-r/">https://elearn.nptel.ac.in/shop/iit-workshops/completed/data-visualization-with-r/</a> |                    |                                                     |    |    |  |

|     |                     | Name               | Signature with Date                                                                  |
|-----|---------------------|--------------------|--------------------------------------------------------------------------------------|
| i   | Faculty             | M. N.V. Viswanadh  |  |
| ii  | Course Coordinator  | Dr. G. Sudhakar    |  |
| iii | Module Coordinator  | V. Subrahmanyam    |  |
| iv  | Program Coordinator | Dr.B. Rama Krishna |  |

  
Principal

