



**A T M E**  
College of Engineering



Department of Computer Science & Engineering (Data- Science)

## Lesson Plan & Work-done Diary for AY: 2024-25, ODD Semester

| Course with Code: Data Structure and Applications (BCS304) |                      |                                                                            |                  | Faculty:                   |                | Semester & Section: III |         |
|------------------------------------------------------------|----------------------|----------------------------------------------------------------------------|------------------|----------------------------|----------------|-------------------------|---------|
| Class No.                                                  | Date planned (DD/MM) | Topics to be covered                                                       | TLP Planned      | Date of Conduction (DD/MM) | Topics Covered | TLP Executed            | Remarks |
| <b>MODULE-1</b>                                            |                      |                                                                            |                  |                            |                |                         |         |
| 1.                                                         |                      | Introduction to C Programming                                              | PPT Chalk & Talk |                            |                |                         |         |
| 2.                                                         |                      | Introduction to Data Structures with examples                              | PPT Chalk & Talk |                            |                |                         |         |
| 3.                                                         |                      | Classifications(Primitive & Non-Primitive)                                 | PPT Chalk & Talk |                            |                |                         |         |
| 4.                                                         |                      | Data structure Operations Review of pointers and dynamic Memory Allocation | PPT Chalk & Talk |                            |                |                         |         |
| 5.                                                         |                      | ARRAYS and STRUCTURES: Arrays, Dynamic Allocated Arrays                    | PPT Chalk & Talk |                            |                |                         |         |
| 6.                                                         |                      | Structures and Unions                                                      | PPT Chalk & Talk |                            |                |                         |         |
| 7.                                                         |                      | Polynomials, Sparse Matrices                                               | PPT Chalk & Talk |                            |                |                         |         |
| 8.                                                         |                      | Representation of Multidimensional Arrays                                  | PPT Chalk & Talk |                            |                |                         |         |
| 9.                                                         |                      | Strings STACKS: Stacks, Stacks Using Dynamic Arrays                        | PPT Chalk & Talk |                            |                |                         |         |
| 10.                                                        |                      | Evaluation and conversion of Expressions                                   | PPT Chalk & Talk |                            |                |                         |         |



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| <b>MODULE-2</b>                                            |                      |                                            |                  |                            |                |                         |         |
| 11.                                                        |                      | Introduction to Queues and Circular Queues | Chalk & Talk PPT |                            |                |                         |         |
| 12.                                                        |                      | Circular Queues Contd                      | Chalk & Talk PPT |                            |                |                         |         |
| 13.                                                        |                      | Using Dynamic Arrays                       | Chalk & Talk PPT |                            |                |                         |         |
| 14.                                                        |                      | Multiple Stacks and queues                 | Chalk & Talk PPT |                            |                |                         |         |
| 15.                                                        |                      | LINKED LISTS: Singly Linked,               | Chalk & Talk PPT |                            |                |                         |         |
| 16.                                                        |                      | Lists and Chains, Representing Chains in C | Chalk & Talk PPT |                            |                |                         |         |
| 17.                                                        |                      | Linked Stacks and Queues,                  | Chalk & Talk PPT |                            |                |                         |         |
| 18.                                                        |                      | Polynomials                                | Chalk & Talk PPT |                            |                |                         |         |



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| <b>MODULE-3</b>                                            |                      |                                                 |                  |                            |                |                         |         |
| 19.                                                        |                      | <b>LINKED LISTS:</b> Additional List Operations | Chalk & Talk PPT |                            |                |                         |         |
| 20.                                                        |                      | Sparse Matrices with examples                   | Chalk & Talk PPT |                            |                |                         |         |
| 21.                                                        |                      | Doubly Linked List                              | Chalk & Talk PPT |                            |                |                         |         |
| 22.                                                        |                      | TREES: Introduction and Binary Trees            | Chalk & Talk PPT |                            |                |                         |         |
| 23.                                                        |                      | Binary Tree Traversals                          | Chalk & Talk PPT |                            |                |                         |         |
| 24.                                                        |                      | Binary Tree Traversals Contd                    | Chalk & Talk PPT |                            |                |                         |         |
| 25.                                                        |                      | Threaded Binary Trees                           | Chalk & Talk PPT |                            |                |                         |         |
| 26.                                                        |                      | Question Paper Problem Solving                  | Chalk & Talk PPT |                            |                |                         |         |



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| <b>MODULE-4</b>                                            |                      |                                       |                  |                            |                |                         |         |
| 27.                                                        |                      | Binary Search trees with examples     | Chalk & Talk PPT |                            |                |                         |         |
| 28.                                                        |                      | Selection Trees,                      | Chalk & Talk PPT |                            |                |                         |         |
| 29.                                                        |                      | Forests                               | Chalk & Talk PPT |                            |                |                         |         |
| 30.                                                        |                      | Representation of disjoint sets       | Chalk & Talk PPT |                            |                |                         |         |
| 31.                                                        |                      | Counting Binary Trees                 | Chalk & Talk PPT |                            |                |                         |         |
| 32.                                                        |                      | GRAPHS: The Graph Abstract Data Types | Chalk & Talk PPT |                            |                |                         |         |
| 33.                                                        |                      | Elementary Graph Operations           | Chalk & Talk PPT |                            |                |                         |         |
| 34.                                                        |                      | Elementary Graph Operations Contd     | Chalk & Talk PPT |                            |                |                         |         |



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| <b>MODULE-5</b>                                            |                      |                                                                |                  |                            |                |                         |         |
| 35.                                                        |                      | Introduction to Hashing                                        | Chalk & Talk PPT |                            |                |                         |         |
| 36.                                                        |                      | Static Hashing, Dynamic Hashing                                | Chalk & Talk PPT |                            |                |                         |         |
| 37.                                                        |                      | PRIORITY QUEUES:<br>Single and double ended Priority Queues    | Chalk & Talk PPT |                            |                |                         |         |
| 38.                                                        |                      | Single and double ended Priority Queues                        | Chalk & Talk PPT |                            |                |                         |         |
| 39.                                                        |                      | Leftist Trees Introduction To<br>Efficient Binary Search Trees | Chalk & Talk PPT |                            |                |                         |         |
| 40.                                                        |                      | Efficient Binary Search Trees                                  | Chalk & Talk PPT |                            |                |                         |         |
| 41.                                                        |                      | Optimal Binary Search Trees                                    | Chalk & Talk PPT |                            |                |                         |         |
| 42.                                                        |                      | Optimal BST Contd                                              | Chalk & Talk PPT |                            |                |                         |         |
| 43.                                                        |                      | Question paper discussion                                      | Chalk & Talk PPT |                            |                |                         |         |



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|                           | Activity                                         | Planned | Actual                    | Remarks |
|---------------------------|--------------------------------------------------|---------|---------------------------|---------|
| 1                         | Theory Classes                                   | 43      |                           |         |
| 2                         | Assignments/ Quizzes/<br>Self-study              | 4       |                           |         |
| 3                         | Tutorials/ Extra classes                         | -       |                           |         |
| 4                         | Internal Assessments                             | 3       |                           |         |
| 5                         | ICT based Teaching<br>(% of usage in Curriculum) | 100%    |                           |         |
| <b>Planning</b>           |                                                  |         | <b>Execution</b>          |         |
| <b>Faculty Signature:</b> |                                                  |         | <b>Faculty Signature:</b> |         |
| <b>HoD Signature:</b>     |                                                  |         | <b>HoD Signature:</b>     |         |