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|---------------------------------------|-------------------------|--------------------------------------------------------------|------------------------|-------------------------------------------------------------------------------------------------------------|--------|--------------------------|
| AIET                                  | Lesson Plan & Execution |                                                              |                        | Format No.                                                                                                  | ACD 08 |                          |
|                                       |                         |                                                              |                        | Issue No.                                                                                                   | 01     |                          |
|                                       |                         |                                                              |                        | Rev. No.                                                                                                    | 00     |                          |
| Name of the faculty                   |                         |                                                              |                        | SOUNDARYA B. C.                                                                                             |        |                          |
| Semester and Section                  |                         |                                                              |                        | III 'A'                                                                                                     |        |                          |
| Date of Commencement                  |                         |                                                              |                        | 31/10/22.                                                                                                   |        |                          |
| Last Working Day of the Semester      |                         |                                                              |                        | 11/03/2023                                                                                                  |        |                          |
| Source Materials List                 |                         |                                                              |                        |                                                                                                             |        |                          |
| 1.                                    |                         |                                                              |                        |                                                                                                             |        |                          |
| 2.                                    |                         |                                                              |                        | 1. Ellis Horowitz and Sartaj Sahni, Fundamentals of Data Structures in C, 2nd Ed, Universities Press, 2014. |        |                          |
| 3.                                    |                         |                                                              |                        | 2. Seymour Lipschutz, Data Structures Schaum's Outlines, Revised 1st Ed, McGraw Hill, 2014.                 |        |                          |
| 4.                                    |                         |                                                              |                        | 3. Reema Thareja, Data Structures using C, 3rd Ed, Oxford press, 2012.                                      |        |                          |
| 5.                                    |                         |                                                              |                        |                                                                                                             |        |                          |
| Subject Name <u>A Data Structures</u> |                         |                                                              |                        |                                                                                                             |        |                          |
| Period                                | Plan                    |                                                              |                        | Execution                                                                                                   |        |                          |
|                                       | Date                    | Topics to be covered                                         | Source Material needed | Topics Covered                                                                                              | Date   | Source Material Referred |
| 1.                                    | 31/10/22                | Data Structures, Classification.                             | T1                     | Data Structures - rev, Classification.                                                                      | 31/10. | 1                        |
| 2                                     | 1/11/22                 | Data Structures Operations                                   | T1                     | Data Structures rev operations                                                                              | 1/11   | 1                        |
| 3                                     | 3/11/22                 | Review of arrays.                                            | T1, T2                 | Review of arrays                                                                                            | 3/11   | 1, 2                     |
| 4                                     | 4/11/22                 | Structures: Array of Structures, Self-Referential Structures | T1, T2                 | Review of array, Structures                                                                                 | 4/11   | 1, 2                     |

| Period | Plan     |                                                        |                        | Execution                                     |          |                         |
|--------|----------|--------------------------------------------------------|------------------------|-----------------------------------------------|----------|-------------------------|
|        | Date     | Topics to be covered                                   | Source Material needed | Topics Covered                                | Date     | Source Material Referre |
| 5.     | 5/11/22  | Dynamic memory allocation.                             | 1, 2, 3                | Self Referential Structures                   | 5/11/22  | 1, 2, 3.                |
| 6      | 7/11/22  | Representation of linear arrays in memory              | 2, 3                   | Dynamic memory allocation                     | 10/11/22 | 2, 3                    |
| 7      | 8/11/22  | Dynamically allocated array.                           | 1, 2                   | Dynamic memory allocation                     | 11/11    | 1, 2.                   |
| 8      | 10/11/22 | Multidimensional array                                 | 3                      | Dynamically allocated arrays.                 | 12/11    | 3                       |
| 9      | 11/11/22 | Demonstration of represent <sup>n</sup> of Polynomials | 1, 2                   | Polynomials, Multidimensional array.          | 14/11    | 1, 2.                   |
| 10     | 12/11/22 | Sparse Matrices with arrays                            | 2, 3                   | Sparse matrices with arrays                   | 15/11    | 2, 3                    |
| 11     | 14/11/22 | Stacks - Introduction                                  | 1                      | Stacks. Introduction                          | 17/11    | 1                       |
| 12     | 15/11/22 | Stack operations & array representation                | 1                      | Stack operations & array representation       | 18/11    | 1                       |
| 13     | 16/11/22 | Stacks using Dynamic arrays                            | 1                      | Stack using Dynamic arrays.                   | 19/11    | 1                       |
| 14     | 17/11/22 | Different representation of expression                 | 1.                     | Different representation of expression        | 21/11    | 1                       |
| 15     | 18/11/22 | Infix to Prefix                                        | 2                      | Prefix to Prefix example.                     | 22/11    | 2                       |
| 16     | 19/11/22 | Conversion & evaluation of Postfix expression          | 1, 2                   | conversion & evaluation of Postfix expression | 22/11    | 1, 2                    |
| 17     | 21/11/22 | Recursion                                              | 2.                     | evaluation of Postfix Recursion               | 24/11    | 2                       |

| Source Material Referred | Period | Plan     |                                                   |                        | Execution                                        |       |                          |
|--------------------------|--------|----------|---------------------------------------------------|------------------------|--------------------------------------------------|-------|--------------------------|
|                          |        | Date     | Topics to be covered                              | Source Material needed | Topics Covered                                   | Date  | Source Material Referred |
| 2.3.                     | 18     | 22/11/22 | Introduction to Queues                            | 2                      | Introduction to Queues                           | 25/11 | 2.                       |
| 3                        | 19     | 24/11/22 | Array Representation of Queues & Queues operation | 1.2.                   | Array Representation of Queues & Queue operation | 28/11 | 1.2                      |
| 2.                       | 20     | 25/11/22 | Circular Queues                                   | 2.                     | Circular Queues                                  | 29/11 | 2.                       |
|                          | 21     | 2/12/22  | Circular Queues using dynamic array.              | 2.                     | Circular Queues using dynamic arrays             | 2/12  | 2                        |
| 2.                       | 22     | 3/12/22  | Dequeues & Priority Queues                        | 1                      | Dequeues & Priority queue                        | 3/12  | 1                        |
| 3                        | 23     | 5/12/22  | Linked list Introduction                          | 1                      | Linked List Introduction, Priority Queue.        | 5/12  | 1                        |
| 1                        | 24     | 6/12/22  | Representation of Different types of Linked List  | 1                      | Representation of different types of Linked List | 12/12 | 1                        |
|                          | 25     | 8/12/22  | operations of Linked List                         | 1                      | Representation of different types of Linked List | 13/12 | 1                        |
| 1                        | 26     | 9/12/22  | Doubly Linked List                                | 1.2.                   | Doubly Linked List                               | 15/12 | 1.2                      |
|                          | 27     | 10/12/22 | Doubly Linked List                                | 2.1                    | Doubly Linked List                               | 16/12 | 2.1.                     |
| 2                        | 28     | 12/12/22 | Circular List                                     | 2                      | Circular List                                    | 17/12 | 2                        |
| 2                        | 29     | 13/12/22 | header linked list                                | 2                      | header linked list                               | 19/12 | 2                        |
| 2                        | 30     | 15/12/22 | Linear stacks and Queues                          | 2                      | Linked stacks & Queues                           | 22/12 | 2.                       |

| Period | Plan     |                                               |                        | Execution                            |       |                         |
|--------|----------|-----------------------------------------------|------------------------|--------------------------------------|-------|-------------------------|
|        | Date     | Topics to be covered                          | Source Material needed | Topics Covered                       | Date  | Source Material Referer |
| 31     | 16/12/22 | Application of linked lists - polynomial      | 2                      | Polynomials                          | 23/12 | 2                       |
| 32     | 17/12/22 | Sparse matrix representation                  | 1.2                    | Sparse matrix                        | 26/12 | 1.2                     |
| 33     | 22/12/22 | Programming examples                          | 1.2                    | Programming example.                 | 27/12 | 1.2                     |
| 34     | 23/12/22 | Trees, Terminologies Binary trees             | 1                      | Trees, Terminologies, Binary tree    | 29/12 | 1                       |
| 35     | 24/12/22 | Properties of Binary tree                     | 1                      | Properties of Binary trees           | 2/1   | 1                       |
| 36     | 26/12/22 | Array and linked list representation          | 1.2                    | Array and linked list representation | 3/1   | 1.2                     |
| 37     | 27/12/22 | Binary Tree Traversals                        | 2                      | Binary Tree Traversal pre-order      | 5/1   | 2                       |
| 38     | 29/12/22 | Threaded Binary tree                          | 2                      | Pre-order and In-order               | 6/1   | 2                       |
| 39     | 30/12/22 | Binary Search Tree operation                  | 1.2                    | In-order examples                    | 7/1   | 2                       |
| 40     | 31/12/22 | Application of Trees Evaluation of expression | 2                      | Threaded BT                          | 10/1  | 2                       |
| 41     | 2/1/23   | AVL tree Red-black tree.                      | 1                      | Binary search Tree                   | 12/1  | 1.2                     |
| 42     | 3/1/23   | Splay tree B-tree                             | 1.2                    | Binary search Tree                   | 16/1  | 1.2                     |
| 43     | 6/1/23   | Graphs- Definition Terminologies & matrix.    | 2                      | BST                                  | 17/1  | 1.2                     |

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|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|------------------------|-------------|
| Others                                                                                                                                                                                                                                                                                                                                                                                         | Planned            | Actual                 | Remarks :   |
| Special Classes                                                                                                                                                                                                                                                                                                                                                                                | 05                 | 05                     |             |
| Tutorials                                                                                                                                                                                                                                                                                                                                                                                      | —                  | —                      |             |
| Assignments                                                                                                                                                                                                                                                                                                                                                                                    | 02                 | 02                     |             |
| Seminars                                                                                                                                                                                                                                                                                                                                                                                       | —                  | —                      |             |
| IA Tests                                                                                                                                                                                                                                                                                                                                                                                       | 03                 | 03                     |             |
| Portions Covered in the entire Semester                                                                                                                                                                                                                                                                                                                                                        | 05 modules (100 %) |                        |             |
| Course Effectiveness                                                                                                                                                                                                                                                                                                                                                                           | Good.              |                        |             |
| Students Feedback                                                                                                                                                                                                                                                                                                                                                                              | Good.              |                        |             |
| Students Response                                                                                                                                                                                                                                                                                                                                                                              | Good.              |                        |             |
| Result                                                                                                                                                                                                                                                                                                                                                                                         | No. of Students AP | No. of Students Passed | % of Result |
|                                                                                                                                                                                                                                                                                                                                                                                                | 62                 | 58                     | 93.54       |
| <div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 45%;"> <p><u>Sudhakar</u><br/>Faculty in Charge</p> </div> <div style="width: 45%; text-align: center;"> <br/> HOD's Signature </div> </div> <p>Signature of Principal (&amp; Remarks if any)</p> |                    |                        |             |