| RJGP NEEMKA, FARIDABAD | | | | |
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| Lesson Plan | | | | |
| | **Name of the faculty :** | **Shweta Meena** | | |
| | **Discipline** | **Diploma( CS )** | | |
| | **Semester :** | **IV** | | |
| | **Subject :** | **Data Structure** | | |
| | **Lesson Plan Duration:** | **11 Weeks** | | |
| | **Work load(Lecture/Practical)per week :** | | | |
| **Week** | **Theory** | | **Practical** | |
| | **Lecture Day** | **Topic** | **Practical Day** | **Topic** |
| **1ST** | Day 1 | Introduction of problem solving,Data Structure concept:Defination,uses and real life examples | **1ST** | Sorting an array.<br>The addition of two matrices using functions. |
| | Day 2 | Problem solving concept top down and bottom up design, structured programming | | |
| | Day 3 | Concept of pointer variables and constants | | |
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| 2ND | Day 4 | Concept of Arrays | 2ND | The multiplication of two matrices.<br>Push and pop operation in stack. |
| | Day 5 | Storage representation of multi-dimensional arrays | | |
| | Day 6 | Operations on arrays with Algorithms (searching, traversing, inserting, deleting) | | |
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| **3RD** | Day 7 | Introduction to linked list | **3RD** | Inserting and deleting elements in queue.<br>Inserting and deleting elements in circular queue. |
| | Day 8 | Representation of linked lists in Memory | | |
| | Day 9 | Operations on linked list (Insertion, deletion and traversals) | | |
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| **4TH** | Day 10 | Application of linked lists | **4TH** | Insertion and deletion of elements in linked list.<br>Insertion and deletion of elements in doubly linked list. |
| | Day 11 | Doubly linked lists | | |
| | Day 12 | Operations on doubly linked lists (Insertion, deletion and traversals),Introduction to stacks | | |
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| **5TH** | Day 13 | Representation of stacks | **5TH** | The Factorial of a given number with recursion and without recursion.<br>Fibonacii series with recursion and without |
| | Day 14 | Implementation of stacks | | |
| | Day 15 | Applications of stacks | | |
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| **6TH** | Day 16 | Introduction to queues | **6TH** | Program for binary search tree operation. |
| | Day 17 | Implementation of queues | | |
| | Day 18 | Circular Queues | | |

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| **7TH** | Day 19 | De-queues | **7TH** | The selection sort technique.<br>The bubble sort technique. |
| | Day 20 | Application of Queues | | |
| | Day 21 | Recursion | | |
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| **8TH** | Day 22 | Concept of Trees | **8TH** | The quick sort technique.<br>The merge sort technique. |
| | Day 23 | Representation of Binary tree in memory | | |
| | Day 24 | Traversing Binary Trees (Pre order, Post order and In order | | |
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| **9TH** | Day 25 | Searching, inserting and deleting binary search trees | **9TH** | The binary search procedures to search an element in a given list. |
| | Day 26 | Introduction to Heap | | |
| | Day 27 | Introduction to sorting and searching | | |
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| **10TH** | Day 28 | Search algorithm (Linear and Binary) | **10TH** | The linear search procedures to search an element in a given list. |
| | Day 29 | Sorting algorithms (Bubble Sort, Insertion Sort example and uses | | |
| | Day 30 | Quick Sort, Selection Sort, | | Bubble sort and Quick sort algorithm implementation |
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| **11TH** | Day 31 | Merge Sort algo and Example | **11TH** | Merge Sort algorithm implementation |
| | Day 32 | Heap Sort algo and Example | | Heap Sort algorithm implementation |