**Course Code: CSE 2103**

**Course Title: Data Structures**

**Course Content**

| Lecture No. | Name of the Topics | Remarks |
|---|---|---|
| 1. | **Chapter 1:** Introduction to Data Structures, Elementary Data Organization | |
| 2. | **Chapter 1:** Basic Data Structures, Data Structure Operations | |
| 3. | **Class test on Chapter 1** | |
| 4. | **Chapter 4:** Introduction, Linear Arrays, Representation of Linear Arrays in Memory, Traversing Linear Arrays, Inserting and Deleting | |
| 5. | **Chapter 4:** Searching: Linear Search, Binary Search | |
| 6. | **Chapter 4:** Multidimensional Arrays, Pointers, Pointer Arrays | |
| 7. | **Chapter 4:** Bubble Sort**,** Record Structures, Parallel Arrays | |
| 8. | **Class test on Chapter 4** | |
| 9. | **Chapter 5:** Introduction, Linked Lists, Representation of Linked Lists in Memory, Traversing a Linked Lists | |
| 10. | **Chapter 5:** Searching a Linked List, Memory Allocation, Insertion into a Linked List | |
| 11. | **Chapter 5:** Deletion from a Linked Lists, Header Linked Lists | |
| 12. | **Chapter 5:** Two way Lists, Practice related Problems | |
| 13. | **Chapter 6:** Introduction, Stacks, Array Representation of Stacks, Quick Sort | |
| 14. | **Chapter 6:** Recursion, Queues, Dequeues, Priority Queues | |
| 15. | **Review Class on Mid Exam** | |
| 16. | **Chapter 7:** Introduction, Binary Trees, Representing Binary Trees in Memory, Traversing Binary Trees | |
| 17. | **Chapter 7:** Traversal Algorithms using Stacks, Threads, Binary Search Trees, | |
| 18. | **Chapter 7:** Searching and Inserting in Binary Search Trees, Deleting in a Binary Search Tree, Heap | |
| 19. | **Chapter 7:** Path Lengths, Huffman's Algorithm, General Trees | |
| 20. | **Class test on Chapter 7** | |
| 21. | **Chapter 8:** Introduction, Graph Theory Terminology | |

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| 22. | **Chapter 8:** Adjacency Matrix, Path Matrix, Warshall's Algorithm for Shortest Paths | |
| 23. | **Chapter 8:** Linked Representation of a Graph, Operations on a Graphs | |
| 24. | **Chapter 8:** Traversing a Graph, Topological Sorting. | |
| 25. | **Class test on Chapter 8** | |
| 26. | **Chapter 9:** Introduction, Sorting, Insertion Sort | |
| 27. | **Chapter 9:** Selection Sort, Heap Sort | |
| 28. | **Review Class on Final Exam** | |

**Referred Book:** Data Structures by Seymour Lipschutz( Schaum's Outlines)