

MAM2205 COMPUTATIONAL MATHEMATICAL LABORATORY - II

Unit I Basic Data structures with programming : Linked list, stacks and queues, priority queues, hashing tables, trees. [2]

Unit II Representation of graph in computer memory, directed graph, rooted tree, sequential representation of graphs. [3]

Unit III Tree Algorithm with programming: Representation of Binary tree in memory, Binary search tree, Priority queues and heap, introduction to B-trees. [1, 2]

Unit IV Introduction to graph algorithm with programming: Graph algorithms traveling-sales man problem, Warshal's algorithm, DFS and BFS, topological sort. [3]

Unit V Report II (need not to be continuation of Report I)

Textbook

1. Thomas H. Cormen. *Introduction to algorithms*. The MIT Press, Cambridge, Massachusetts, 3 edition, 2009.
2. Seymour Lipschutz. *Schaums outline of theory and problems of data structures*. McGraw-Hill, New York, 1986.
3. Seymour Lipschutz and Marc Lipson. *Schaums outline of theory and problems of discrete mathematics*. McGraw-Hill, 2 edition, 1997

References

- [1] Gregory L. Heileman. *Data structures, algorithms, and object-oriented programming*. McGraw-Hill, New York, 1996.
- [2] Yedidyah Langsam, Moshe Augenstein, and Aaron M. Tenenbaum. *Data structures using C and C++*. Prentice Hall, Upper Saddle River, N.J., 2 edition, 1996.