

MOTHER TERESA WOMEN'S UNIVERSITY

KODAIKANAL

PAPER I - RESEARCH METHODOLOGY

COMPUTER SCIENCE

Unit – I : Fundamentals of Research : Definition and Meaning of Research – Importance of Research – Characteristics of Research steps in Research – Types of Research – Research Ethics.

Research Problems: Meaning of Research Problems – source of Research Problems – Characteristics of Good Research Problems – Selection and formulation of Research problems (or) Research Design – Meaning, needs and features of a good Research Design.

Unit – 2: Literature Survey: What is literature Survey – function of Literature Survey: Maintain a notebook, developing a bibliography, Online Tools – Google, Cite seer, ACM Digital Library, Survey Papers.

Unit – 3: Research Report : Types of Research Report- Styles of Reporting - Steps in Drafting Research Report – Editing the final draft.

Unit 4: Abstract Data Types: Linked List – Doubly Linked list and Circularly linked list – Implementation of Linked list – Array Implementation of stack – Queue: Array Implementation – Application of queues. Graphs and Trees: Topological sort, Bubble Sort, Insertion sort, Shell sort Heap Sort, Merge Sort, Quick Sort – Complexities. Linear Search and Binary Searching in Tables.

Unit 5: Design and Analysis of Algorithms: Parallel Algorithms – Basics of Linear Programming Algorithms – Graph Algorithms – Geometric Algorithms – Approximation Algorithms.

Reference

1. Research Methodology – C.R.Kothari
2. Research Methodology - C.H.Chaudhary, RBSA Publications
3. Research Methodology – G. Basotia and R.K.Sharma
4. Fundamentals of Computer Algorithms – Ellis Horowitz, Sartaj Sahni & Sanguthevar Rajasekaran
5. Data Structures and Algorithm Analysis in C++ - Mark Allen Weiss, Addison – Wesley 2nd Edition
6. Introduction to Algorithms – T.H.Cormen, C.E.Leiserson and R.L.Rivest, MIT Press.
7. The Design and Analysis of Algorithms – V.Aho, J.E.hopcroft and J.D.Ullman, Addison Wesley.