

CCI - Programming in C and Data Structures

UNIT I

Evaluation and applications of C - Structure of a C program - Data Types -Declarations - Operators - Expressions - Type Conversions - Built in functions - Data Input and Output - Control Statements.

UNIT II

Functions: Defining and Accessing Functions-passing parameters to functions- passing parameters to functions - Arguments - recursive functions - storage classes - Arrays - arrays to functions - Arrays and strings - string functions - string manipulation

UNIT III

Pointers - structures - unions - Data files - opening, closing and processing files - files with structures and unions - register variables - Bitwise operations - Macros - Preprocessors

UNIT IV

Data Structures: Introduction and overview - Arrays, Records and pointers Linear Array, representing Linear Array in memory - Traversing Linear Array - Sorting - Searching - Binary Search Pointers - Records, Records Structure.

UNIT V

Linked Lists - representation - Traversing a linked lists - searching - Garbage collection - insertion and deletion - stacks - array representation - quick sort - recursion - queues. Trees - binary trees - traversing binary tree - searching and deleting binary search tree. Heap-sort.

Text Book

1. "Programming in C" - E. Balagurusamy - Tata McGraw- Hill Publication, 2nd Edition.
2. "Theory and problems of Data Structures" - Schaum's Outline Series - Tata McGraw-Hill Publications, 1986 Chapters 1,4,5,6,7.
3. "Programming in C & C++" by Dr.C.Muthu and T.Karthikeyan, Esswar Publications.

Reference Books

1. "The Sprit of C" - Mulish Cooper - JAICO Publishing House, 1999
2. "Let us C" - Yeswant Kanetkar - BPB publications, 1999
3. "Fundamentals of Data Structures" - Ellis Horowitz Sartaj Sahni - Galgotia publishers, 1999.