

SARDAR PATEL UNIVERSITY
BCA (Semester-II)
Course Code : US02CBCA01
(Advanced C Programming and Introduction to Data Structures)

Effective from June - 2011

Credits : 3

Lectures per week : 3

All units carry equal weightage.

1. Usage of Pointers

- Introduction and usage of pointers
- Declaration, initialization and dereferencing of pointer variables
- Pointers and addresses
- Pointers and function arguments
- Returning multiple values through pointers, Dynamic memory allocation, Pointers and arrays, Pointer arithmetic

2. Structures, Unions and File Handling

- Basics of structures, Structures and functions, Structures and arrays, Pointers to structures, Nested structures
- Unions
- Typedefs
- Introduction to File Handling and Usage
- Operations on files, File access modes, Handling text files

3. Introduction to Data Structures

- Introduction to data structures, their usage, applications and advantages
- Primitive and non-primitive data structures and operations on them
- Linear and non-linear data structures
- Introduction to stacks, operations on stacks
- Applications of stacks

4. Queues and Linked Lists

- Queues and their uses
- Types of queues : Simple queues, Circular queues, Double ended queues
- Introduction to linked lists
- Types of linked lists
- Singly linked lists, Doubly linked lists, Circular linked lists
- Applications of linked lists

MAIN REFERENCE BOOKS :

1. Kernighan B., Ritchie D. : The C Programming Language, Prentice Hall, 1988
2. Cooper H. & Mullah H : The Sprit of C, Jaico Publication House, New Delhi.
3. Balaguruswami : Programming in ANSI C., Tata McGraw Hill Publication.