

**SARDAR PATEL UNIVERSITY**  
**Programme & Subject: B.Sc (Computer Science)**  
**Semester: IV**  
**Syllabus with Effect from: November/December-2012**

<b>Paper Code: US04CCSC01</b>	<b>Total Credit: 3</b>
<b>Title Of Paper: Advance 'C' &amp; Introduction to Data Structure</b>	

Unit	Description in detail	Weighting (%)
I	<b>Usage of Pointers &amp; Basics of Structures</b> 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 Basics of structures	25%
II	<b>Advance of Structur, Unions and File Handling</b> Structures and functions, Structures and arrays, Pointers to structures, Nested structures Unions Typedefs Introduction and Usage Operations on files, File access modes, Handling text files	25%
III	<b>Introduction to Data Structures and Stack</b> <b>Introduction to data structures</b> 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 <b>Stack</b> Introduction to stacks, operations on stacks Applications of stacks	25%
IV	<b>Queues and Linked Lists</b> <b>Queues</b> Queues and their uses Types of queues : Simple queues, Circular queues, Double ended queues <b>Introduction to linked lists</b> Types of linked lists Singly linked lists, Doubly linked lists, Circular linked lists Applications of linked lists	25%

**Basic Text & Reference Books:-**

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

