SARDAR PATEL UNIVERSITY
Programme & Subject: M.Sc – Information Technology (Integrated)
Semester: III
Syllabus with Effect from: June-2013

Paper Code: PS03CIIT03	Total Credit: 3
Title Of Paper: Object Oriented Programming & C++	

Unit	Description in detail	Weightage (%)
I	**Object Oriented Programming (OOP) Concepts and Introduction to C++** structured programming vs. object oriented programming Basic OOP concepts : objects , classes , encapsulation , data hiding , inheritance, polymorphism Introduction to C++: structure of a C++ program , data types , variables, constants, expressions, statements and operators Usage of header files Control flow statements : if else, for loop, while loop, do while loop, switch, break and continue	25%
II	**Input/Output, Arrays and Working with Classes** Basic I/O in C++ Arrays in C++ : introduction, declaration, initialization of one , two and multidimensional arrays, operations on arrays Working with strings : introduction, declaration, string manipulation and arrays of string Classes and objects in C++ Constructors : default, parameterized, copy, constructor overloading and destructor Access specifiers, implementing and accessing class members Working with objects : constant objects, nameless objects, live objects, arrays of objects	25%
III	**Functions, Function Overloading and Inheritance** Introduction to functions, library and user-defined functions, parameters passing, default arguments Functions overloading , inline functions, friend functions and virtual functions Inheritance: Introduction , derived class declaration, forms of inheritance Inheritance and member access ability, constructor and destructor in derived class, construction invocation and data member initialization.	25%
IV	**Operator Overloading, Pointers and Files** Operator overloading : Introduction, overloaded operators, unary operator overloading, operator keyword, operator return values, binary operators overloading, overloading with friend function Usages of Pointers in C++ : basic overview Dynamic memory allocation Files : introduction and applications File operations : open, read, write, seek and close	25%

Basic Text & Reference Books:-

- E Balagurusamy : Object Oriented Programming in C++, Tata McGraw-Hill Publishing Co. Ltd.
- Robert Lafore : Object Oriented Programming in Turbo C++, Guide, Galgotia Pub. (P) Ltd.

Books For Additional Reading :

- Barkakati N. : Object Oriented Programming in C++, PHI.
- OOP's using C++ for Dummies.