

## CLUSTER UNIVERSITY SRINAGAR (SYLLABUS)

Course Code	BCA-CR3101
Course Title	Object Oriented Programming Using C++
Semester	BCA 3 <sup>rd</sup> Semester
Course Type & Credits	Core Paper - 04 Credits (L) + 02 Credits (P) = 06 Credits

### Unit I

Introduction to OOPS, Programming characteristics of object-oriented languages, C and C++

C++ Programming basics: Output using COUT Directives, Input with CIN Type, Bool, Setw manipulator Type conversions, Conditional Statements, Looping Statements

Functions: Returning values from functions, Reference arguments, Overloaded function, Inline function.

### Unit II

Object and Classes: Data Encapsulation, Abstraction, Polymorphism, Classes, Messages Association, Interfaces, Object as function arguments The default copy constructor.

Arrays and string arrays fundamentals Arrays as class Member, Arrays of object, string, The standard C++ String class

Overloading unary operations Overloading binary operators, data conversion, pitfalls of operators overloading and conversion keywords Explicit and Mutable

### Unit III

Concept of inheritance Derived class and base class, Derived class constructors, member function, inheritance, class hierarchies, inheritance and graphics shapes, public and private inheritance, aggregation : Classes within classes, inheritance and program development

### Unit IV

Virtual Function, friend function, Static function, Assignment and copy initialization, this pointer, dynamic type information

Streams classes, Stream Errors, Disk File I/O with streams, file pointers, error handling in file I/O with member function, overloading the extraction and insertion operators, memory as a stream object, command line arguments, and printer output

### Suggested Reading

1. Function templates, Class templates Exceptions
2. Object Oriented Programming In C++ by Robert Lafore Techmedia Publication
3. The complete reference C++ by Herbert shieldt Tata McGraw Hill Publication
4. Object Oriented Programming in C++ Saurav Sahay Oxford University Press
5. Object Oriented Programming in C++ R Rajaram New Age International Publishers 2nd

