

MCA 202 Object Oriented Programming using C++

Module I (12 Hours)

Fundamentals of object oriented programming: Introduction to Object Oriented Paradigm, procedural Paradigm, An overview of classes, objects and Methods, inheritance and polymorphism.

Basic OF C++: Structure of c++ program, data types and declaration, Expressions and operator precedence, Program flow control, functions, scope of variables, Inline functions and default arguments, dynamical location new and delete operators.

Module II (12 Hours)

Classes as objects, user defined data types, constructors & destructors, controlling and accessibility, class members, member functions, Friend functions, this pointer, static and const member functions.

Inheritance: Derived classes, syntax of derived classes, Types of Inheritance, Virtual Functions and Virtual Base Classes.

Adhoc Poly morphism: Overloading and Function selection, Friend Functions, overloading operators such as assignment subscripting, I/O, pointer to class member, new and delete.

Module III (16 Hours)

Templates: Introduction algorithms, sequence containers, iterators, specialized iterators, associative containers, strong user-defined object, function objects. Generic Classes, Class Templates, Function Templates Parameterizing Vectors, STL, Containers, Iterators, Function Adapters, String Library

Exceptions: Using assert signal. throwing exceptions, Try Blocks, handlers, Exception specification, standard exceptions and uses.

I/O streams: Output and Input class streams, Ostream, Istream, File handling, using strings as streams

Module 4 (10 Hours)

Pointer : Addresses and pointers. The address of operator and pointer and arrays. Pointer and Function pointer and C++ types string. Memory management : New and Delete, pointers to objects, debugging pointers.

Module 5 (6 Hours) (as per choice of faculty)

Portion covered can be tested through Internal evaluation only not to be included in University examination)

TEXTBOOKS

1.ObjectOrientedProgrammingusingC++,IraPohl,PEARSONEDUCATION

2.ObjectOrientedProgramminginC++,RobertLafore

3.UMLin21Days,Tech Media