



# Information Booklet

**Course Name:**  
**Programming in C++**  
**Course Code: P1**



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# Programming in C++

## 1. Introduction:

C++ is a general-purpose programming language. It is regarded as a "middle-level" language, as it comprises a combination of both high-level and low-level language features. C++ is widely used in the software industry. Some of its application domains include systems software, application software, device drivers, embedded software, high-performance server and client applications, and entertainment software such as video games.

## 2. Eligibility:

Knowledge of Computers and XII th pass

## 3. Duration:

60 Hours. Two Hours each day

- Theory            15        hours.
- Practical        45        hours.

## 4. Course Details:

Type of course	Professional IT Course
Syllabus	<ul style="list-style-type: none"> <li>• Programming Concepts             <ul style="list-style-type: none"> <li>○ Flowcharts</li> <li>○ Algorithms</li> <li>○ Data Flow Diagrams</li> <li>○ Software Life Cycle</li> </ul> </li> <li>• Introduction to object –oriented approach             <ul style="list-style-type: none"> <li>• Object – oriented methodology</li> <li>• Analysis and design</li> <li>• Creating classes in c++</li> </ul> </li> <li>• Creating object             <ul style="list-style-type: none"> <li>• Variable and data type</li> <li>• Writing and execution a c++ program</li> <li>• Introduction to array</li> </ul> </li> <li>• Encapsulation and abstraction             <ul style="list-style-type: none"> <li>• Access specifiers</li> <li>• Static variable and functions</li> <li>• Friend functions and classes</li> <li>• Operators</li> <li>• Conditional construct</li> </ul> </li> </ul>

- Loop construct
- The scope of variable
- More about arrays
  - Multidimensional array
  - Passing array as parameter
  - Enumeration
- Loops & Decisions
  - Conditional statement
  - Switch statement
  - Logical operators, relational operators, loops
- Structures
  - Structures
  - Accessing structures
  - Nested structures
- More about functions
  - In – built functions
  - Command line parameters
  - Pointer to function
  - Arguments passing to functions
  - Reference and default arguments
  - Storage classes
  - Recursion
- Pointers
  - Pointers and addresses
  - Pointers and arrays, functions, strings
  - Memory management
  - Pointers to pointer
- Constructor and destructors
  - Initializing objects
- Polymorphism
  - Implementing polymorphism
  - Function overloading
  - Operator over loading
  - Operating unary operator
  - Overloading binary operators
- Inheritance
  - Identifying relation between classes
  - Classes and inheritance
- Dynamic polymorphism
  - Implementing late binding
- Multiple inheritances

- Introducing to multiple inheritance
  - Ambiguities in multiple inheritances
  - Invocation of constructors and de constructors
  
  - File input and output
    - Stream classes hierarchy
    - Stream insertion Extraction
    - File input and output
    - File open and close
    - Open mode bits
    - File pointer
  
  - Exception handling and templates
    - Exception handling
  
  - Linked list
    - Linked lists
    - Single linked list
    - intersection of nodes in a linked list
  
  - Operation on single linked list
    - Traversing a linked list
    - Querying information
    - Deleting nodes
- Graphics
- Text mode graphics
  - Setting graphic mode
  - Shapes, line, colour, pattern and sound
- Mini project

## 5. Fee:

Rs. 2500 (exclusive of all taxes)