



## PROFESSIONAL CERTIFICATION TRAINING FOR C++ PROGRAMMING



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### About C++ Programming

C++ is a MUST for students and working professionals to become a great Software Engineer. C++ is very close to hardware, so you get a chance to work at a low level which gives you lot of control in terms of memory management, better performance and finally a robust software development.

C++ programming gives you a clear understanding about Object Oriented Programming. You will understand low level implementation of polymorphism when you will implement virtual tables and virtual table pointers, or dynamic type identification.

C++ is one of the every green programming languages and loved by millions of software developers.

C++ is the most widely used programming languages in application and system programming. So you can choose your area of interest of software development.

C++ really teaches you the difference between compiler, linker and loader, different data types, storage classes, variable types their scopes etc.



Date	Lecture Details	Attendance
	<b>Lecture - 1 Overview, Environment Setup and Basic Syntax</b>	
	• Introduction to C++	
	• OOPs paradigm	
	• Basic Concept of OOP	
	• Objects	
	• class	
	• Data abstraction and encapsulations	
	• Inheritance	
	• Polymorphism	
	• Dynamic Binding	
	• Benefits of OOP	
	• OOP Language	
	• Application of OOPS	
	• Different Between C& C++	
	• Explain Structure of C++	
	• Program Structure	
	• C++ Statement	
	• Compiling and Linking	
	• Programs	
	• Practical Exercise	
	<b>Lecture - 2 Data Types, Variable Types and Variable Scope</b>	
	• Keywords	
	• Identifiers	
	• Constants	
	• Basic Data Types	
	• User Defined Data type	
	• Derived Data Types	
	• Symbolic Constants	
	• Type Compatibility	
	• Declaration of variables	
	• Dynamic Initialization of Variables	
	• Operator in C++	
	• Scope Resolution Operator	
	• Memory	
	• Practical Exercise	

Date	if..else	Attendance
	<b>Lecture - 3 Variable Scope and Storage classes</b>	
	• Control Structure:if	
	• do..while	
	• Storage Classes	
	• Practical Exercise	
	• <b>Lecture - 4 Functions and References</b>	
	• Introduction to Function	
	• Main()	
	• Function Prototyping`	
	• Looping in C++	
	• Practical Exercise	
	<b>Lecture - 5 Functions, References and Overloading (Operator &amp; Function)</b>	
	• Introduction to Function	
	• Main()	
	• Function Prototyping	
	• Looping in C++	
	• Inline Functions	
	• Default Arguments	
	• Recursion	
	• Function Overloading	
	• Math Library Function	
	• Practical Exercise	
	<b>Lecture - 6 Classes and Objects</b>	
	• Class	
	• Specifying Class	
	• Defining Member Functions	
	• Private Member Functions	
	• Inside class function implementation	
	• Outside class function implementation	
	• Static Member Functions	
	• Array of Objects	
	• Object as Function Arguments	
	• Friend Functions	
	• Returning Objects	
	• Array Within a Class	
	• Static Data Members	
	• Constructors Introduction	
	• Constructor Characteristics	
	• Default constructor	

Date	Parameterized Constructors	Attendance
	<ul style="list-style-type: none"> <li>Multiple Constructors in class</li> </ul>	
	<ul style="list-style-type: none"> <li>Overloading Constructors</li> </ul>	
	<ul style="list-style-type: none"> <li>Dynamic Initialization of Objects</li> </ul>	
	<ul style="list-style-type: none"> <li>Copy Constructor</li> </ul>	
	<ul style="list-style-type: none"> <li>Dynamic Constructors</li> </ul>	
	<ul style="list-style-type: none"> <li>Destructors</li> </ul>	
	<ul style="list-style-type: none"> <li>Constructing two Dimensional Arrays</li> </ul>	
	<ul style="list-style-type: none"> <li>Programs</li> </ul>	
	<ul style="list-style-type: none"> <li>Practical Exercise</li> </ul>	
	<b>Lecture - 7 Overloading (Operator and Function)</b>	
	<ul style="list-style-type: none"> <li>Defining Operator Overloading</li> </ul>	
	<ul style="list-style-type: none"> <li>Overloading Unary Operators,</li> </ul>	
	<ul style="list-style-type: none"> <li>Programs</li> </ul>	
	<ul style="list-style-type: none"> <li>Overloading Binary Operators</li> </ul>	
	<ul style="list-style-type: none"> <li>Overloading Binary Operator Using Friend</li> </ul>	
	<ul style="list-style-type: none"> <li>Practical Exercise</li> </ul>	
	<ul style="list-style-type: none"> <li>Storage Classes</li> </ul>	
	<ul style="list-style-type: none"> <li>Manipulations of Strings Using Operators</li> </ul>	
	<ul style="list-style-type: none"> <li>Type Conversions</li> </ul>	
	<ul style="list-style-type: none"> <li>Programs</li> </ul>	
	<ul style="list-style-type: none"> <li>Practical Exercise</li> </ul>	
	<b>Lecture - 8 Inheritance</b>	
	<ul style="list-style-type: none"> <li>Inheritance: Introduction</li> </ul>	
	<ul style="list-style-type: none"> <li>Defining Derived Class</li> </ul>	
	<ul style="list-style-type: none"> <li>Single Inheritance</li> </ul>	
	<ul style="list-style-type: none"> <li>Making Private Member Inheritance</li> </ul>	
	<ul style="list-style-type: none"> <li>Data Encapsulation</li> </ul>	
	<ul style="list-style-type: none"> <li>Single Inheritance</li> </ul>	
	<ul style="list-style-type: none"> <li>Multilevel Inheritance</li> </ul>	
	<ul style="list-style-type: none"> <li>Multiple Inheritance</li> </ul>	
	<ul style="list-style-type: none"> <li>Hierarchical Inheritance</li> </ul>	
	<ul style="list-style-type: none"> <li>Hybrid Inheritance</li> </ul>	
	<ul style="list-style-type: none"> <li>Practical Exercise</li> </ul>	
	<b>Lecture - 9 Polymorphism</b>	
	<ul style="list-style-type: none"> <li>Virtual Base Classes</li> </ul>	
	<ul style="list-style-type: none"> <li>Abstract Class</li> </ul>	
	<ul style="list-style-type: none"> <li>Constructors in Derived Class</li> </ul>	
	<ul style="list-style-type: none"> <li>Polymorphisms</li> </ul>	
	<ul style="list-style-type: none"> <li>Interface</li> </ul>	

Date	Runtime Polymorphism	Attendance
	<ul style="list-style-type: none"> <li>Pure Virtual Functions</li> </ul>	
	<ul style="list-style-type: none"> <li>Programs, Compile time Polymorphisms</li> </ul>	
	<ul style="list-style-type: none"> <li>Practical Exercise</li> </ul>	
	<b>Lecture - 10 Files and Streams</b>	
	<ul style="list-style-type: none"> <li>Introduction to Streams</li> </ul>	
	<ul style="list-style-type: none"> <li>Unformatted I/O Operation</li> </ul>	
	<ul style="list-style-type: none"> <li>Formatted Console I/O Operations : width() precision()fill()</li> </ul>	
	<ul style="list-style-type: none"> <li>Manipulation</li> </ul>	
	<ul style="list-style-type: none"> <li>Working with File</li> </ul>	
	<ul style="list-style-type: none"> <li>Working with single file</li> </ul>	
	<ul style="list-style-type: none"> <li>read &amp; write data using write() and read() function</li> </ul>	
	<ul style="list-style-type: none"> <li>Practical</li> </ul>	
	<ul style="list-style-type: none"> <li>Working with multiple file</li> </ul>	
	<ul style="list-style-type: none"> <li>Updating File</li> </ul>	
	<ul style="list-style-type: none"> <li>Error Handling During File Operations</li> </ul>	
	<ul style="list-style-type: none"> <li>Command Line Arguments</li> </ul>	
	<ul style="list-style-type: none"> <li>Practical Exercise</li> </ul>	
	<b>Lecture - 11 Exception Handling and Namespacing</b>	
	<ul style="list-style-type: none"> <li>Introduction to Exceptions</li> </ul>	
	<ul style="list-style-type: none"> <li>Exception Handling Mechanism</li> </ul>	
	<ul style="list-style-type: none"> <li>Practical Exercise</li> </ul>	
	<b>Lecture - 12 Data Abstraction, Data Encapsulation and Interfaces.</b>	
	<ul style="list-style-type: none"> <li>Data Abstraction</li> </ul>	
	<ul style="list-style-type: none"> <li>Data Encapsulation</li> </ul>	
	<ul style="list-style-type: none"> <li>Interface</li> </ul>	
	<ul style="list-style-type: none"> <li>Practical Exercise</li> </ul>	
	<ul style="list-style-type: none"> <li>Lecture-15 Practical Exercise</li> </ul>	
	<ul style="list-style-type: none"> <li>Practical Exercise</li> </ul>	
	<ul style="list-style-type: none"> <li>Doubt Session</li> </ul>	

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