



# C++ Programming

Category: Programming | Duration: 2 Months (8 Weeks)

~~Rs. 2,500~~

**Rs. 1,500**

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## Course Overview

Builds on programming fundamentals to teach object-oriented programming, the Standard Template Library (STL), and data structures in C++ - a strong foundation for software development roles and technical interviews.

Prerequisites	Tools & Technologies
Basic programming knowledge (C or any language) is recommended.	GCC/G++, Code::Blocks, VS Code, online compilers

## Curriculum

### Week 1: C++ Fundamentals

- C++ vs C - key differences
- Variables, data types, and I/O streams
- Functions and default arguments

### Week 2: Object-Oriented Programming Basics

- Classes and objects
- Constructors and destructors
- Access specifiers and encapsulation

### Week 3: OOP Pillars

- Inheritance - types and use cases
- Polymorphism - function and operator overloading
- Virtual functions and abstract classes

### Week 4: Templates & Exception Handling

- Function and class templates
- Exception handling with try/catch
- Custom exception classes

### Week 5: Standard Template Library (STL) - I

- Vectors, pairs, and strings
- Iterators and algorithms
- Sets and maps



## Week 6: Standard Template Library (STL) - II

- Stacks, queues, and priority queues
- Sorting and searching with STL
- Practical STL-based problem solving

## Week 7: Data Structures in C++

- Linked lists - singly and doubly
- Implementing stack and queue using classes
- Introduction to basic tree structures

## Week 8: Mini Project & Assessment

- Build a small object-oriented application
- Code review and debugging practice
- Final assessment and project presentation

## What You Will Learn

- Apply object-oriented programming principles in C++
- Use templates and handle exceptions effectively
- Work confidently with the Standard Template Library (STL)
- Implement core data structures using C++ classes
- Solve coding problems commonly asked in interviews
- Build and present a small OOP-based project

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