

# C++ language:

In this C++ Language course, you will learn how to develop, compile, and execute C++ programs as well as syntax, arrays, pointers functions, build classes and objects to create an object-oriented C++ program. And also, we will teach you inheritance, polymorphism, templates, file and exception handling with live example. You will learn each topic with live practical.

## Syllabus:

### Module 1: Basic Concepts

1. What is C++
2. Hello, World!
3. Getting the Tools
4. Printing a Text
5. Comments
6. Variables
7. Working with Variables
8. More on Variables
9. Basic Arithmetic
10. Assignment and Increment Operators

### Module 2: Conditionals and Loops

11. The if Statement
12. The else Statement
13. The while Loop
14. Using a while Loop
15. The for Loop
16. The do... while Loop
17. The switch Statement
18. Logical Operators

### Module 3: Data Types, Arrays, Pointers

19. Introduction to Data Types
20. int, float, double
21. string, char, bool
22. Variable Naming Rules
23. Arrays
24. Using Arrays in Loops
25. Arrays in Calculations
26. Multi-Dimensional Arrays
27. Introduction to Pointers
28. More on Pointers
29. Dynamic Memory
30. The sizeof () Operator

### Module 4: Functions

31. Introduction to Functions
32. Function Parameters
33. Functions with Multiple Parameters
34. The rand () Function
35. Default Arguments
36. Function Overloading
37. Recursion
38. Passing Arrays to Functions
39. Pass by Reference with Pointers

## **Module 5: Classes and Objects**

- 40. What is an Object
- 41. What is a Class
- 42. Example of a Class
- 43. Abstraction

- 44. Encapsulation
- 45. Example of Encapsulation
- 46. Constructors

## **Module 6: More on Classes**

- 47. Separate Files for Classes
- 48. Destructors
- 49. Selection Operator
- 50. Const Objects
- 51. Member Initializers

- 52. Composition, Part 1
- 53. Composition, Part 2
- 54. The Friend Keyword
- 55. The This Keyword
- 56. Operator Overloading

## **Module 7: Inheritance & Polymorphism**

- 57. Inheritance
- 58. Protected Members
- 59. Derived Class Constructor &  
Destructor

- 60. Polymorphism
- 61. Virtual Functions
- 62. Abstract Classes

## **Module 8: Templates, Exceptions, and Files**

- 63. Function Templates
- 64. Function Templates with Multiple  
Parameters
- 65. Class Templates
- 66. Template Specialization

- 67. Exceptions
- 68. More on Exceptions
- 69. Working with Files
- 70. More on Files

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