



Development & Training

C, C++ SYLLABUS

### C TRAINING COURSE SYLLABUS

- Introduction to the C Language
- Data Types and Variables
- Input/Output Management
- Control-flow Statements
- Modular Programming with Functions
- Arrays, Pointers, and Strings
- Structures and Dynamic Memory Allocation
- The Preprocessor and Multiple-file Compilation
- File Input/Output

### C++ TRAINING COURSE SYLLABUS

- C++ Overview
- Functions and Variables
- Input/Output Management
- Classes in C++
- Operator Overloading
- Initialization and Assignment
- Storage Management
- Inheritance
- Polymorphism
- Input and Output in C++ Programs
- Exceptions
- Templates

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## C Syllabus

### Basics of C

- ✓ History and Features of C
- ✓ Importance of C
- ✓ About Procedural Language
- ✓ Role of Compiler
- ✓ Role of Interpreter
- ✓ The Structure of a C Program
- ✓ Writing C Programs
- ✓ Building an Executable Version of a C Program
- ✓ Debugging a C Program
- ✓ Examining and Running a C Application Program

### An Overview Of C And Buzzwords

- ✓ Data Type, Variable
- ✓ Operators
- ✓ Control Statement
- ✓ Preprocessor Directives Input and Output Operators
- ✓ Reading/Writing Characters
- ✓ Formatted input/output Function

### Control Statement

- ✓ The IF.....ELSE Statement
- ✓ IF.....ELSE ladder
- ✓ Nesting of IF.....ELSE Statements
- ✓ The Switching Statements
- ✓ The do-while Statement
- ✓ The while statement
- ✓ FOR Statements

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### **Array in C**

- ✓ Array : What and Why?
- ✓ One Dementions Arrays
- ✓ Two Dementions Arrays
- ✓ Multi Dimentions Arrays
- ✓ Dynamic Arrays

### **String Handling**

- ✓ Reading String from Terminal
- ✓ Writing String to Screen
- ✓ String Handling Functions
- ✓ Table of String

### **Function in C**

- ✓ Function Basics
- ✓ Advantage of Function
- ✓ Recursion
- ✓ Variable Storage Classes
- ✓ Variable arguments Function

### **Pointers in C**

- ✓ Understading Pointers
- ✓ Pointer expressions
- ✓ Pointer and Arrays
- ✓ Pointers and Character String
- ✓ Pointers to Functions
- ✓ Pointers and Structures

### **Structures and Unions**

- ✓ Defining a Structure
- ✓ Advantage of Structure
- ✓ Size of Structure

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✓ Arrays of Structures

- ✓ Structures and Functions
- ✓ Defining Unions

### **Dynamic Memory allocation**

- ✓ Introduction to Dynamic Memory Allocation
- ✓ Malloc
- ✓ Calloc
- ✓ Realloc
- ✓ Free

### **LinkedList**

- ✓ Concepts of Linked Lists
- ✓ Creating a Linked Lists
- ✓ Inserting/Deleting an item
- ✓ Application of Linked Lists

### **File Management in C**

- ✓ Introduction to File Management
- ✓ Opening/Closing a File
- ✓ Input/Output operations on Files
- ✓ Error Handling During I/O Operations
- ✓ Command Line Arguments

### **Preprocessor**

- ✓ Macro Substitution
- ✓ File Inclusion
- ✓ Computer Control Directives

### **Project Development**

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## C++ Syllabus

### C++ Overview

- ✓ C++ Characteristics
- ✓ Object-Oriented Terminology
- ✓ Polymorphism
- ✓ Object-Oriented Paradigm
- ✓ Abstract Data Types
- ✓ I/O Services
- ✓ Standard Template Library
- ✓ Standards Compliance

### Functions and Variables

- ✓ Functions: Declaration and Definition
- ✓ Variables: Definition, Declaration, and Scope
- ✓ Variables: Dynamic Creation and Derived Data
- ✓ Arrays and Strings in C++
- ✓ Qualifiers

### Classes in C++

- ✓ Defining Classes in C++
- ✓ Classes and Encapsulation
- ✓ Member Functions
- ✓ Instantiating and Using Classes
- ✓ Using Constructors
- ✓ Multiple Constructors and Initialization Lists
- ✓ Using Destructors to Destroy Instances
- ✓ Friendship

### Operator Overloading

- ✓ Operator Overloading
- ✓ Working with Overloaded Operator Methods



### **Initialization and Assignment**

- ✓ Initialization vs. Assignment
- ✓ The Copy Constructor
- ✓ Assigning Values
- ✓ Specialized Constructors and Methods
- ✓ Constant and Static Class Members

### **Storage Management**

- ✓ Memory Allocation
- ✓ Dynamic Allocation: new and delete

### **Inheritance**

- ✓ Overview of Inheritance
- ✓ Defining Base and Derived Classes
- ✓ Constructor and Destructor Calls

### **Polymorphism**

- ✓ Overview of Polymorphism

### **Input and Output in C++ Programs**

- ✓ Standard Streams
- ✓ Manipulators
- ✓ Unformatted Input and Output
- ✓ File Input and Output

### **Exceptions**

- ✓ Exceptions
- ✓ Inheritance and Exceptions
- ✓ Exception Hierarchies
- ✓ Inside an Exception Handler

### **Templates**

- ✓ Template Overview

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- ✓ Customizing a Templated Method
- ✓ Standard Template Library Containers

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