

C/C++

Course Duration: 4 months

Qualification: open to all individuals interested in learning c/c++.

Eligibility:

No prior programming experience required; open to all individuals interested in learning C/C++.

Medium of Instruction:

English

Duration:

Minimum 4 months and Maximum 6 months

Programming Details:

The programming has been divided into 4 modules. Consequently, there will be examinations at every end of module. For beginners it is first important to build command over programming concepts. In this course our goal is to help you to be confident with the coding fundamentals.

Module 1: Introduction to C Programming

- What is C Programming?
- History and Importance of C
- Setting Up Development Environment
 - GCC / MinGW
 - Code: Blocks / VS Code
- Basic Syntax in C
- Variables and Data Types
- Operators (Arithmetic, Relational, Logical)
- Writing Your First Program in C
- Compiling & Executing with Compiler
- **Practical Exercises:**

- Basic input/output
- Arithmetic calculator
- Simple logical programs

Module 2: Control Structures and Functions

Conditional Statements:

- if, else, else if
- Basic switch
- Loops:
 - for
 - while
 - do-while
- Functions:
 - Function definition
 - Function declaration
 - return & parameters
 - Basic scope
- Arrays (1-D only)
- Introduction to Pointers (only basics: address, dereferencing)
- **Practical Exercises:**
 - Pattern printing
 - Array searching / sum
 - Function-based programs



Module 3: Introduction to C++

- Difference Between C and C++
- C++ Syntax (very similar to C)
- Input & Output (cin, cout)
- Introduction to OOP Concepts

- What is a Class?
- What is an Object?
- Basic Class & Object Programs
- Simple Constructors (no overloading)
- Encapsulation basics (simple getter/setter)
- **Practical Exercises:**
 - Student class
 - Bank account class
 - Car class

Module 4: Basic C++ Concepts & Final Mini Project

- File I/O Basics in C++
 - Reading files
 - Writing files
- Simple Program Structure
- Beginner-Level Project Examples:
 - Student Management Console App
 - Simple Billing System
 - Library Record System
 - Basic Banking System
- Project includes:
 - C basics
 - Loops
 - Arrays
 - Functions
 - Simple class & object usage
- Final Assessment / Review

