

# Programming Objects with C++ – Fundamentals

## Description

Object-Oriented Programming is now at the heart of modern software development.

This comprehensive course on C++ fundamentals guides you step by step, from mastering the basics to understanding advanced concepts. You will learn to design more robust, reusable, and easy-to-maintain programs, while fully leveraging the strengths of the C++ language.

With a clear and progressive approach, this Object-Oriented Programming training will help you acquire practical and immediately applicable skills. Each module covers an essential aspect of the language: flow control, functions, arrays, structures, objects, classes, pointers, and inheritance. You will consolidate your knowledge through concrete examples and targeted exercises.

## Mastering Object-Oriented Programming with C++

By following this OOP course, you will learn to effectively model problems through objects and optimize your code. You will discover how to take advantage of C++'s powerful features to structure your projects in a clear and scalable way. Concepts such as inheritance, polymorphism, and memory management will no longer hold any secrets for you.

### Course Content

#### Module 1: C++ Flow Control

- C++ if...else
- C++ for loop
- C++ do...while loop
- C++ break and continue
- C++ switch statement
- C++ goto statement

#### Module 2: C++ Functions

- Types of C++ functions
- C++ function overloading
- C++ default arguments
- C++ storage class
- C++ recursion
- C++ return by reference

#### Module 3: C++ Arrays and Strings

- C++ arrays
- Multidimensional arrays
- C++ functions and arrays
- C++ strings

#### Module 4: C++ Structures

- C++ structure
- Structure and functions
- C++ pointer to structure
- C++ enumeration

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

- C++ objects and classes
- C++ constructors
- C++ objects and functions
- C++ operator overloading

### **Module 6: C++ Pointers**

- C++ pointer
- C++ pointers and arrays
- C++ pointers and functions
- C++ memory management

### **Module 7: C++ Inheritance and Introduction to Advanced Topics**

- C++ ANSI libraries
- C++ templates and container classes
- C++ exception handling
- C++ basic data types

### **Lab / Exercises**

- During the course, participants are encouraged to actively participate in the learning experience by running example files during lectures and performing coding challenges during labs. Each lab session allows you to compare your solution to the instructor's

### **Documentation**

- Digital courseware included

### **Participant profiles**

- Softwares developers who want to use C++ based on object-oriented concepts

### **Prerequisites**

- Knowledge of C programming

### **Objectives**

- Hands-on introduction to object oriented programming in C++ for C programmers
- Emphasis is placed on the features of C++ that support effective modeling of the problem domain and reuse of code

### **Description**

Object-Oriented Programming in C++ Training

### **Niveau**

Fondamental

### **Classroom Registration Price (CHF)**

3100

**Virtual Classroom Registration Price (CHF)**

2900

**Duration (in Days)**

4

**Reference**

CPP-01