

## **Intermediate C++**

**Modality: On Demand**

**Duration: 28 Hours**

### ***About this course:***

This course acts as a second step in the mastering level of C++ programming language. After learning the basics of this programming language, the next step is the intermediate level, in which you will learn the programming language in great depth. This entire course set comprises of three parts or levels. This is the second part, as mentioned. The course set will teach the students some of the crucial concepts of C++. In the intermediate level, the course will focus on teaching about how C++ interfaces with the memory, constituting factors like pointers/memory addresses, heap memory management, and writing/reading files.

Gaining knowledge and expertise on C++ enables you to control computers by coding applications in the computers. You will be able to run your applications on various different hardware platforms like personal computers which run on the operating systems of Windows, Linux, UNIX, and Mac OS X. Apart from these, you can also run your applications on small form of hardware personal computers like IoT devices, e.g. the Raspberry PI and Arduino –based boards.

### ***Learning Objectives:***

The course has the following learning objectives:

- Knowing about C++ pointers
- Knowing about different C++ reference types
- Regulating memory in C++
- Many other OOP concepts in C++
- Interacting with Streams and Files for managing input/output operations

### ***Audience:***

The course is designed and suitable for C/C++ developers.

### ***Requirements:***

The course does not have any mandatory requirements. However, there are some strong recommendations about this course for you which will be beneficial for you to take into consideration before starting it. The four modules of this course are an extension on the C++ Fundamentals. Hence, it is strongly recommended to complete the prior level before starting this one. This will be especially important if you do not have any previous experience of working with C++. Apart from this, having a sound comprehension of fundamental operations of computer functions is handy. Therefore, students are recommended to have a good practice and know-how of computer functions. They should know how to install applications in the computer, and how to work according to the rules within a command line on their selected operating system. Good amount of knowledge and experience of a

C++ compiler and editor, based on your own choice, is also a highly stressed-upon recommendation, as this course does not cover the concepts of development environment.

## Course Outline:

### Module One Pointers

- Pointers
- Reference Types
- Managing Memory in C++
- Self-Check
- Lab
- Lab Assessment

### Module Two More C++ Classes

- Splitting Classes
- Constructors and Destructors
- Scope in Classes
- Self-Check
- Lab
- Lab Assessment

### Module Three More OOP in C++

- Inheritance
- Encapsulation and Protected Access
- Virtual Functions and Abstract Classes
- Self-Check
- Lab
- Lab Assessment

### Module Four Streams and Files

- Module Four Introduction
- Stream I/O
- Processing Files
- Strings
- Self-Check
- Lab
- Lab Assessment