C++, based on the C programming language, is an Object-Oriented Programming (OOP) language. Unlike C, C++ is built on the concept of "objects" instead of using data and actions on data as the basis for the program's logic. Using OOP, related data and routines are grouped into an object that then relates to other objects in the program. These objects can represent all of the parts and functions of a real entity or an abstract idea. C++ is a powerful language that is inherently useful for large-scale projects.

In this hands-on course, students will design and write programs in the C++ language. Emphasis is placed on object-oriented techniques, such as inheritance and function overloading to implement polymorphism. The class ends with an introduction to the Standard Template Library (STL).

Course Objectives:

- Explain what Object-Oriented Programming is.
- Identify abstractions to use as class names.
- Know when and how to use inheritance.
- Use polymorphism in C++ design.
- Create templates.
- Integrate exception handling into your programs.
- Create overloaded functions.
- Create and use overloaded operators.
- Pass objects by reference.
- Write constructors and destructors.
- Put objects on the heap.
- Define and use data and functions related to a class.
- Organize OOP code classes so classes properly support each other.

Audience: C programmers responsible for the development of advanced applications or systems programs in C++.

Prerequisites: *C Programming* or *Java Programming*. Programming experience in a C-style language, such as C, Java, or C# is required.

Number of Days: 5 days