

## Fruto Academy C++ Developer Course Syllabus

### Course Overview:

Welcome to the Fruto Academy C++ Developer Course! This comprehensive program will equip you with the skills and knowledge needed to become a proficient C++ developer. Throughout this course, you'll learn the fundamentals of C++ programming, object-oriented principles, and how to build various types of applications using C++.

Course Duration: 14 weeks

### Week 1-2: Introduction to C++ Programming

- Understanding programming concepts and paradigms
- Introduction to the C++ programming language
- Setting up C++ environment and IDE

### Week 3-4: C++ Basics

- Variables, data types, and basic operators
- Control structures: conditionals and loops
- Functions and function overloading
- Handling exceptions and errors

### Week 5-6: Object-Oriented Programming (OOP) in C++

- OOP principles: encapsulation, inheritance, and polymorphism
- Creating and using classes and objects
- Designing and implementing class hierarchies

### Week 7-8: C++ Standard Library and STL

- Working with containers: vectors, lists, maps, etc.
- Algorithms and iterators
- Using smart pointers for memory management

### Week 9-10: File Handling and I/O in C++

- Reading from and writing to files
- Understanding input and output streams
- Serialization and deserialization of objects

### Week 11: Introduction to C++11 and Beyond

- New features introduced in C++11 and later versions
- Lambda expressions and functional programming
- Working with threads and concurrency

### Week 12-13: C++ Application Development

- Introduction to application development using C++
- Building console-based applications

- Debugging and profiling C++ code

#### Week 14: Final Project and Deployment

- Applying C++ skills to a real-world project
- Building and packaging C++ applications
- Final project: Develop and deploy a complete C++ application

#### Assessment and Certification:

- Weekly coding assignments: 40%
- Midterm project (C++ application development): 20%
- Final project: 30%
- Participation and quizzes: 10%

#### Recommended Resources:

- "C++ Primer" by Stanley B. Lippman, Josée Lajoie, and Barbara E. Moo
- "Effective Modern C++" by Scott Meyers
- Online tutorials and documentation for C++ programming and libraries

Note: This syllabus is subject to adjustment based on instructor discretion and the evolving landscape of C++ development.

For inquiries, contact us at [info@frutoacademy.com](mailto:info@frutoacademy.com) or visit [www.frutoacademy.com](http://www.frutoacademy.com).