

Intermediate C++ Programming

Course No.

2308G

Description

This class will introduce the C++ programmer to intermediate and advanced C++ concepts in the UNIX development environment. The class will present generic concepts fortified by heavy lab work.

Prerequisites

The student of this course should have a strong familiarity with the C programming language. An advanced C review component is included with this course for touching up C skills. This review will be visited as needed.

Major Topics

- Introductory Concepts
- Classes
- Operator Overloading
- Templates
- Inheritance
- Input/Output istream

Duration

5 days



Course Contents

1. Section 1

- Intro and Overview
- A quick tour of the environment
- Review of C Concepts
- OOP Concepts
- C++ Enhancements To C
- C++ Keywords
- Introductory Concepts
 - Input / Output
 - Function Overloading
 - The Class
 - References
 - Operator Overloading
 - Inheritance

2. Section 2

- Classes
 - Definition
 - Member Functions
 - The "this" Pointer
 - Static Members
 - Scope
 - Nested Classes
 - Initialization
 - Construction
 - Destruction
 - Memberwise Assignment

3. Section 3

- Operator Overloading
 - Definition
 - Friend functions
 - Operator=

- Operator[]
- Operator()
- Operator->
- Other overloaded operators

4. Section 4

- Templates
 - Function
 - Review
 - Class
 - Definition
 - Instantiation
 - Member Functions
 - Friend Declarations
 - Specializations
- Inheritance
 - Defining a Class Hierarchy
 - Base Class Member Access
 - Base and Derived Class Construction
 - Base and Derived Class Virtual Functions
 - Multiple Inheritance
 - Public, Private, and Protected Inheritance
 - Virtual Inheritance

5. Section 5

- Input / Output - iostream
 - The Output Operator <<
 - The Input Operator >>
 - Overloading the Output Operator <<
 - Overloading the Input Operator >>
 - File Input and Output

