

Course Outline



Tel: +44 (0) 118 979 4000 Fax: +44 (0) 118 979 4000

Email: training@ptr.co.uk Web: www.ptr.co.uk

Programming in C++ For Non-C Programmers

Course Description:

This course is designed to give delegates the knowledge to develop/maintain programs using C++ and its object oriented techniques. The course is for Programmers moving to object-oriented programming using C++.

Pre-requisites:

IT personnel who already have good experience of programming in some language such as Basic, Pascal etc.

Course Content:

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- **Fundamentals**
 - Origin of C++
 - Program Format
 - Building Blocks
 - Comments
 - Keywords
 - Basic Data Types
 - Int
 - Float
 - Double
 - Char
 - Constants
 - Arithmetic Operators
 - Arithmetic expressions
 - Precedence
 - Associativity
 - Implicit conversions
 - Casting
 - Standard input, output
 - Compiling and linking
 - Pre-processor Directives
 - #include

- **Iteration**
 - Relational Operators
 - Relational Expression
 - For Statement
 - While statement
 - Do while

- **Choice**
 - If statement
 - Switch statement
 - ?:operator
 - Break

21a Peach Street Wokingham Berkshire RG40 1XJ

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- **Choice**
- **Arrays**
 - Continue
 - What is an array
 - Declaration
 - Elements
 - Initialising
 - Processing
 - Multi-dimensional arrays
- **Functions**
 - Function Declaration
 - Sample Function
 - Invoking the function
 - Header files
 - The return Statement
 - The Call/return Mechanism
 - Static Variable
 - Function Overloading
 - Inline functions
- **References and Pointers**
 - What is a pointer
 - Declaration
 - Initialisation
 - Using the pointer
 - Arrays and pointers
 - The [] operator
 - Using [] with a pointer
 - The null pointer
 - Passing arrays to functions
 - Dynamic memory allocation
- **Strings**
 - What are strings
 - Declaration

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- **Strings**
 - Initialising
 - Processing
 - String Library functions
 - Character Test Functions
 - Character Conversion
 - Double quoted strings
 - Array of Pointers
 - Args to main

- **Class**
 - Object Oriented Methodology
 - C++ implementation of objects
 - Class declaration
 - Implementing the class functions
 - Constructor function
 - Overloading the constructors
 - Read-only functions
 - Destructor function
 - Variations in class declaration

- **Object Relationships**
 - Class Building
 - Derived class constructor
 - Inline functions of classes
 - Other type of relationships
 - Part-of relationship

- **Operator overloading**
 - Illustration with class string
 - Overloading the assignment operator
 - This pointer
 - The copy constructor
 - Using reference
 - Overloading the operator +
 - Friend function

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- **Polymorphism**
 - Class Conversion
 - Pointer conversion
 - Id in the class
 - Virtual functions
 - Abstract classes

- **IO Streams**
 - The Hierarchy of io classes
 - Predefined objects
 - Formatting
 - Most used manipulators
 - ios flags
 - Creating inserters and extractors for classes
 - File i/o
 - Open modes
 - Access modes
 - Illustration of text file io
 - Binary mode i/o
 - Read/write bytes
 - Read/write blocks
 - Other io functions

Course Duration:

5 Days