

Course Outline



Tel: +44 (0) 118 979 4000

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Programming in C

Course Description:

Students will learn the fundamentals of the C programming language.

Pre-requisites:

Background in a structured programming language, such as Pascal, is desirable, though not required.

Course Content:

- **Introduction to C**
 - The C Language and its Advantages
 - The Structure of a C Program
 - Writing C Programs
 - Building an Executable Version of a C Program
 - Debugging a C Program
 - Examining and Running a C Application Program
- **00000000000000**
- **Data Types and Variables**
 - Data Types
 - Operands, Operators, and Arithmetic Expressions
- **Input/Output Management**
 - The Input/Output Concept
 - The getchar() and putchar() Functions and Single-character I/O
 - Formatted Input and the scanf() Function

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- **Control-Flow Statements**
 - The Control-Flow Program Statements
 - Looping Statements
 - The Data-checking process

- **Modular Programming with Functions**
 - The C Function
 - Passing Data to Functions
 - Passing an Address to Modify a Value in Memory
 - Using Functions in the Checkbook Program
 - The C Standard Library Functions

- **Arrays, Pointers, and Strings**
 - Arrays
 - Pointers
 - Strings
 - Using Arrays, Strings, and Pointers in the Checkbook Program

- **Structures and Dynamic Memory Allocation**
 - Structures
 - Arrays of Structures
 - Passing Structures to Functions
 - Nesting Structures
 - Dynamic Memory Allocation

- **The Preprocessor and Multiple-file Compilation**
 - The C Preprocessor and the #include and #define directives
 - The Conditional Compilation Directives
 - Global Variables and Variable Storage Classes
 - Program Organization and Multi-file Compilation

- **File Input/Output**
 - Command-line Arguments
 - File Input and Output
 - Combining Command-line Arguments and File I/O

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- **Appendices**
 - The ASCII Table
 - The Bitwise Operators
 - A Comparison of the ANSI C and K R Function Formats
 - Enumerated Data Types
 - Unions
- **Additional information:**

Although problem-solving skills are recognized as an integral component of computer programming, the primary focus of this course is to teach the specific components of the C language. Each lesson and activities focuses on this objective by having students examine and evaluate existing code, and modify or create new code that implements the components they have just learned about.

Course Duration:

5 Days

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