

C Programming

Audience Course C Programming

The course [C Programming](#) is designed for programmers who want to write programs in C or other people who want to understand C code.

Prerequisites Course C Programming

No prior programming knowledge is required to join this course. Knowledge of programming in another language is however beneficial to a quick understanding of the subject matter.

Realization Training C Programming

The theory is treated on the basis of presentation slides and is interspersed with exercises. Illustrative demo programs are used to explain the concepts further. The course material is in English.

Certification C Programming

Participants receive an official certificate C Programming after successful completion of the course.

Duration: 5 days

Price: € 2650

[Open Schedule](#)



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Content Course C Programming

In the course C Programming the basic principles of the C computer language are covered.

C Preprocessor, Compiler and Linker

After an introduction about the background and characteristics of C and the function of the preprocessor, compiler and the linker, the program structure of C programs is discussed.

C Language Syntax

Through a series of coordinated exercises, participants learn to program with the variables, data types, storage classes, operators and control flow constructs of the C language.

Functions and Parameters

Subsequently, the use of functions in C is addressed. It is explained how functions are declared and defined and how parameters are passed to functions. The difference between passing parameters by reference and by value is explained.

Pointers

Ample attention is also paid to the pointer concept, arithmetic with pointers, the equivalence between pointers and arrays and the use of function pointers.

Structures and Unions

Next the focus is set on user defined composite data structures such as structures and unions.

C Standard Library

Finally, the C standard library is discussed, which includes the treatment of various functions for dealing with file IO, date and time, the manipulation of strings and the dynamic allocation of memory.

Follow up Courses

Follow up courses for the course C Programming are [Advanced C Programming](#) and [C++ Programming](#).

Modules Course C Programming

Module 1 : Intro C Language	Module 2 : Variables and Data Types	Module 3 : Control Flow
History of C C Characteristics C Programs Keywords Creating First C Program Compiling and Linking Preprocessor Header Files Creating Executables C Standard Library Basic I/O Comments C Compilers Resources	Data Types in C Variable Names Data Type Sizes Signed and Unsigned Types Numeric Constants Character Constants String Constants Enumeration Constants Symbolic Constants Type Casting Arrays Multidimensional Arrays Character Arrays Derived Data Types	Control Flow Constructs Statements and Blocks If Statement If..else Statement Ambiguity of else else-if Construction switch Construction case Statements for Loop Nested for Loop while Loop do while Loop break And continue goto And Labels
Module 4 : Operators	Module 5 : Functions	Module 6 : Storage Classes
Arithmetic Operators In- and Decrement Operators Relational Operators Logical Operators Assignment Operators Bitwise Operators Shift Operators Conditional Operators sizeof Operator Type Conversions	Library Functions User Defined Functions Calling Functions Function Prototype Function Definition Passing Parameters Call by Value Call by Reference Local and Global Variables Return Statement	Storage Classes Automatic Variables External Variables Globals with Extern Static Variables Register Variables typedef Scope and initialization Initialization Array Initialization
Module 7 : Preprocessor Directives	Module 8 : Pointers	Module 9 : Structures and Unions
C Preprocessor #include Directive #define and #undef Directive Macro's with Arguments Macro Gotchas Conditional Inclusion #if #else #endif #elif Multiple Inclusion .h Files #ifdef and #ifndef Predefined Macros __FILE__ __LINE__	Variables and Addresses Pointer Declaration Initializing Pointers Pointers to Variables Pointer Dereferencing Pointer Assignment Pointers and Arrays Address Arithmetic null Pointer Pointers to Functions Character Pointers Command Line Arguments	Structure Definition Variables of Structure Type Accessing Structures Nested Structures Structure Initialization Pointers in and to Structures Structures and Functions Arrays of Structures Bitfield Structures typedef And Structures Unions Type Fields
Module 10 : Standard C Library		
File I/O Functions Access Modes File Read and Write Function scanf Function Parameters Operation of scanf Utility Functions Flow Control Functions system Function ASCII to Binary Functions Environment Function Memory Management Functions Time and Date Functions		