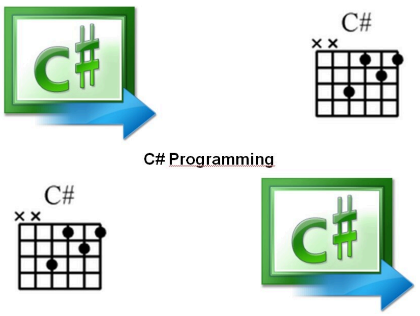
C# Programming

Duration: 5 days **Price: € 2650**

Open Schedule



Audience C# Programming Course

This course is intended for aspiring developers who want to learn the C# programming language and its usages in .NET applications.

Prerequisites C# Programming Course

No specific prior knowledge is required for this course. Experience in other programming languages such as JavaScript, **Java** or **C++** is beneficial to understanding.

Realization Training C# Programming

The theory is presented on the basis of presentation slides. Demos are used to clarify the discussed concepts. The theory is interspersed with exercises. The course material is in English.

Certification C# Programming

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

Content Course C# Programming

In the course C# Programming participants learn to program in the .NET platform with the C# (C Sharp) language. The emphasis of the course is on C# syntax, program structure and implementation details. The acquired C# knowledge can be applied in both the .NET Framework and .NET Core. The most recent version of C# is used in the course.

C# Introduction

The course C# Programming starts with a discussion of the essentials of the .NET Framework and .NET Core. Covered are the Common Language Runtime, managed code, assemblies and garbage collection.

Language Syntax

Next attention is paid to variables, data types, operators and loops. Calling methods and dealing with arrays and strings is also part of the course.

Classes and Objects

Then object-oriented programming with classes and objects is discussed. Concepts such as encapsulation, inheritance and polymorphism are explained. There is also attention for error handling by means of exception handling.

Multithreading

Subsequently the participants learn to work with multiple threads and the implementation of concurrent tasks. The coordination between threads through synchronization mechanisms such as events and Monitor Wait and Pulse is also discussed.

Special Classes

The program of the course C# Programming also includes a number of special classes such as delegates, lambdas, properties, indexers and attributes. And attention is paid to Regular Expressions with the RegExp class.

Generics and Collections

The C# Programming course concludes with a discussion of parameterized types and methods called generics. Generics are often used in collection classes that are next on the program. Finally attention is paid to File I/O with C# libraries.

Modules Course C# Programming

Module 1 : C# Intro	**Module 2 : Language Syntax**	**Module 3 : Classes and Objects**
C# Versions .NET Architecture .NET Core Common Language Runtime Managed Code C# Compilation and Execution Managed Execution Assemblies MSIL and Metadata Garbage Collection .NET Framework Class Library	C# Data Types Variables and Scope Operators Flow Control if and switch Statement for and foreach Loops while Statement do while Statements break and continue Strings and Arrays Methods and Parameter Passing	Class Definition Encapsulation Access Modifiers Constructors Creating Objects Fields and Properties static Modifier Overloading Constants Common Type System Value and Reference Types
Module 4 : Inheritance	**Module 5 : Exception Handling**	**Module 6 : Namespaces**
Derived Classes Overriding Methods Hiding Methods Polymorphism Abstract Classes Interfaces Implementing Interfaces Type Casting Implicit and Explicit Casting	Error Conditions Exceptions in C# Exception Handling Syntax Exception Flow Exceptions Template Exceptions Object finally Clause Throwing Exceptions User Defined Exceptions	Defining Namespaces Using Namespaces Nested Namespaces Namespace Directory Assemblies and Modules Assembly Manifest Types of Assemblies Global Assembly Cache Strong Names
Module 7 : Threads	**Module 8 : Synchronization**	**Module 9 : Special Classes**
Thread Benefits and Drawbacks C# Thread Model Thread Class Thread Stack Thread Delegate Autonomous Classes Passing Parameters Thread Naming Background Threads Thread Exceptions Thread Methods	Concurrent Method Invocation Blocking on Monitor Lock Statement Mutual Exclusion in C# Joining Threads Interrupting Threads DeadLock Wait Handles Interthread Communication Condition Synchronization Monitor Wait and Pulse	What is a Delegate? Multicasting Delegates and Events Enumerations Extension Methods Partial Classes Attributes Attribute Parameters Custom Attributes Nullable Types Static Classes
Module 10 : Utility Classes	**Module 11 : Generics**	**Module 12 : Collections**
Object Class Boxing and Unboxing Overriding Equals Math Class DateTime Structure Regex Class Process and Environment Class Localizing Dates and Numbers	What are Generics? Need for Generics Generic Class Syntax Multiple Generic Parameters Bounded Types Runtime Type Parameter Constraints Generic Methods	Framework Classes Predefined Collections Array and List Class Queue and Stack Class Linked List Sorted List Dictionary Hashtable
Module 13 : File I/O		
I/O Classes Accessing Text Files Using Directive Accessing Binary Files Buffered Streams Serialization Accessing File System Directory Classes		