



MFE-IT

Reference: 2B-C14

C# 14 and .NET 10 Training Course

Developing Modern and High-Performance Applications

Duration: 5 Days | Hours: 35 h

Remote · Sessions guaranteed from 1 registrant · 60% hands-on practice

DESCRIPTION

This C# 14 and .NET 10 training course enables you to master the development of modern applications on the Microsoft platform. You will learn the fundamentals of the language, object-oriented programming and the .NET architecture while discovering new features designed to improve performance and productivity.

The programme also covers ASP.NET Core, EF Core and essential development tools. Through practical workshops, you will develop a complete application applying best practices for maintainable code. Upon completion, you will be able to design robust and scalable solutions with C# 14 and the .NET 10 ecosystem.

LEARNING OBJECTIVES

By the end of this training course, participants will be able to:

- Understand the concepts, architecture and technologies of the .NET platform
- Master the syntax and features of the C# language
- Configure and use development tools such as Visual Studio for .NET projects
- Leverage the new features of C# 14, designed to improve productivity
- Design web, API and desktop applications with ASP.NET Core and the .NET 10 ecosystem
- Apply software design best practices: SOLID, clean architecture, testing

PREREQUISITES

- Basic structured or object-oriented programming skills recommended
- Familiarity with a development environment
- Prior experience with a language such as Java, C++ or JavaScript is a plus

Because each participant is unique, a personalised interview is systematically organised in advance with our expert to design a training programme perfectly aligned with their objectives, level and professional challenges.

TARGET AUDIENCE

- Developers wishing to create modern applications with C# and .NET
- Software engineers and technical consultants working in the Microsoft ecosystem

- IT professionals adopting the latest framework versions for performance and maintainability

DETAILED PROGRAMME

The training alternates between theoretical input and hands-on practice (approximately 60% of the time). Modules are built around practical exercises based on real-world business use cases.

Module 1 – Introduction to .NET 10 and C# 14

- .NET architecture, runtime and BCL overview
- Positioning of C# in the Microsoft ecosystem
- Overview of new features and productivity gains

Module 2 – C# Language Fundamentals

- Variables, primitive types, operators and control flow
- Methods, parameters, optional and named arguments
- Collections, LINQ basics and string manipulation

Module 3 – Object-Oriented Programming

- Classes, inheritance, interfaces and polymorphism
- Software design best practices
- Introduction to SOLID principles

Module 4 – What's New in C# 14

- Extension members and extension properties
- Null-conditional assignment with the ?. operator
- Direct access to the backing field via the field keyword
- Parameter modifiers in lambda expressions
- These enhancements reduce repetitive code in common scenarios

Module 5 – Application Development with .NET

- Creating APIs and web applications with ASP.NET Core
- OpenAPI improvements and form validation
- Introduction to EF Core 10 and performance optimisation

Module 6 – Performance and Modernisation

- Compiler and runtime optimisations (escape analysis, allocations)
- Hardware accelerations and loop optimisations
- Profiling and benchmarking with BenchmarkDotNet

Module 7 – Tools and Productivity

- .NET project management and solution structure
- Improved debugging and diagnostics
- Testing best practices and software quality

Module 8 – Practical Workshops

- Creating a complete application end to end
- Setting up a clean architecture
- Implementing modern C# 14 features in real code

TEACHING METHODS

Format and Delivery

The training is delivered remotely via an interactive virtual classroom. It can also be delivered on-site, with content customised to match the needs of your professional project. The theory/practice split is approximately 40%/60%.

MFE-IT Ultra-Personalised Format

Each session accommodates between 1 and 3 participants, ensuring highly individualised support. A preliminary interview allows us to tailor the content to each participant's profile. Inter-company sessions are guaranteed from just 1 registrant (except in cases of force majeure).

Skills Assessment

Throughout the training, the trainer assesses participant progress through multiple-choice questions, role-playing exercises and hands-on work. At the end, a certificate of achievement is issued to each participant.

Post-Training Support

For one month following the training, each participant can contact MFE-IT trainers with questions about implementing acquired knowledge. A response is provided by email or telephone within 48 working hours.

Accessibility

MFE-IT is committed to welcoming people with disabilities. Contact: contact@mfe-it.com.

PRACTICAL INFORMATION

Trainer Resources

- Structured demonstrations aligned with the detailed programme
- Exercise briefs and solutions throughout the training
- A ready-to-use technical environment for practical workshops
- Trainer validation of acquired knowledge at the end of each workshop
- Digital reference documents

Certification and Validation

At the end of the training, a certificate is sent by email specifying the objectives, nature, duration and assessment results. A completion certificate can also be provided on request.

Benefits for Participants

- Train from your workplace or home, with no travel required
- Benefit from an expert trainer-consultant on the subject
- Enjoy an ultra-personalised format (1 to 3 participants)
- Continue training even in the event of unforeseen circumstances

Benefits for the Organisation

- Optimise the training budget by reducing travel and accommodation costs
- Offer quality training to all employees, regardless of location
- Reduce absence time linked to travel
- Support team upskilling in all contexts