



# MFE-IT

Reference: OF/AZ2002

## Web ASP.NET Core Training Course AZ-2002

Develop an Application Consuming an API

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*Duration: 1 Day | Hours: 7 h*

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

## DESCRIPTION

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This Web ASP.NET Core Training Course AZ-2002 guides you step by step in creating robust ASP.NET Core web services and integrating them into dynamic web applications. You will learn to design RESTful APIs, consume them from a user interface, and apply advanced security practices (JWT, authorisation).

The course also covers data management with Entity Framework Core, automated testing, CI/CD pipelines and cloud deployment best practices. Through practical workshops, you will develop a complete application from backend to frontend, ready to be deployed to production.

## LEARNING OBJECTIVES

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

- Understand the architecture of a modern ASP.NET Core web application
- Master the development of a RESTful API with ASP.NET Core
- Consume external or internal APIs from a web application (HTTP, JSON, auth)
- Manage dependency injection, configuration, security and routing
- Implement authentication and authorisation (JWT, OAuth2, OpenID Connect)
- Write unit and integration tests for APIs and consumers

## PREREQUISITES

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- Mastery of C# fundamentals and object-oriented programming
- Knowledge of web concepts (HTTP, REST, JSON)
- Basic knowledge of ASP.NET Core (controllers, views, middleware) recommended

*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

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- .NET developers wishing to strengthen their skills in web and API development
- Backend or full-stack developers wanting to design modern web applications
- Software engineers, technical consultants or application architects on ASP.NET Core projects

## DETAILED PROGRAMME

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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 ASP.NET Core and Environment

- ASP.NET Core architecture and modern .NET runtime
- Installation and configuration: SDK, Visual Studio, VS Code
- Project templates and minimal API patterns

### Module 2 – Creating a RESTful API with ASP.NET Core

- Web API project structure and conventions
- Routes, controllers, actions and HTTP attributes
- Model binding, validation and content negotiation

### Module 3 – Consuming an External API from the Server

- HttpClient and Typed Clients via dependency injection
- JSON serialisation with System.Text.Json and Newtonsoft
- Network error handling, timeouts and retry strategies (Polly)

### Module 4 – Frontend Web Development

- Razor Pages or MVC for the consumer application
- API calls, UI-side data binding, pagination and forms
- Optional Blazor components for dynamic UI

### Module 5 – Data Management and EF Core

- Entity Framework Core for persistence
- Migrations, DbContext and entity relationships
- Lazy and explicit loading strategies

### Module 6 – Security, Testing and CI/CD

- JWT authentication and OAuth2 / OpenID Connect
- Unit tests, integration tests and dependency mocking
- CI/CD with Azure DevOps or GitHub Actions

## Module 7 – Deployment, Observability and Workshop

- Deployment on Azure App Service and Docker containers
- Logs, monitoring and metrics
- Practical workshop: complete API + consumer application

## TEACHING METHODS

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### 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](mailto:contact@mfe-it.com).

## PRACTICAL INFORMATION

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### 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