



Introduction to ASP.NET Core 3 Development

Course ISI-1524

5 Days

Instructor-led, Hands on

Course Information

ASP.NET Core 3 is the latest release of Microsoft's cross-platform version of its ASP.NET Web development framework. Version 3 includes several new features and improvements. This 5-day course introduces attendees to ASP.NET Core development and teaches the skills necessary to design and build well-architected web and service-oriented applications.

At Course Completion

After completing this course, students will be able to:

- Understand the goals and benefits of the .NET Core platform
- Learn to make good decisions about application architecture and the choice of data access technology
- Use ASP.NET Core's routing system to achieve a REST-style architecture
- Learn how to build a compelling and maintainable HTML user interface using the Razor view engine and client-side JavaScript
- Gain experience using Blazor, Razor Pages, SignalR, and gRPC
- Learn how to extend and modify ASP.NET Core by creating custom components and templates
- Understand the different cross-platform deployment options available including via Docker containers

Prerequisites

Before attending this course, students must have:

- Experience with the C# programming language and object-oriented programming concepts.
- Some knowledge of HTML, CSS, and JavaScript concepts.

Course Outline

Module 1: Introduction

- What is .NET Core?

Contact ISInc for more information at 916.920.1700 or by visiting our website at <http://www.isinc.com>



- .NET Core vs .NET Full Framework
- Overview of ASP.NET Core Classic Data Analysis with Excel

Module 2: .NET Core SDK

- Installation
- Version Management
- Command-Line Interface (CLI)
- Hello World Application

Module 3: ASP.NET Core Application Architecture

- NuGet Packages and Metapackages
- Application Startup
- Hosting Environments
- Middleware and the Request Processing Pipeline
- Services and Dependency Injection
- MVC vs. Razor Pages Import data into excel.

Module 4: Application Configuration

- Configure and ConfigureServices
- Configuration Providers and Sources
- Configuration API
- Options Pattern
- HTTPS, GDPR, and HTTP/2

Module 5: Request Routing

- RESTful Services
- Endpoint Routing
- Attribute-Based Routing
- Route Templates
- Route Constraints

Module 6: Models

- Introduction
- Persistence Ignorance
- Object-Relational Mapping
- Entity Framework (EF) Core
- Dapper ORM

Module 7: Controllers

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- Responsibilities
- Requirements and Conventions
- Dependencies
- Action Results

Module 8: Views

- Responsibilities
- Conventions
- Razor Syntax
- Layouts
- ViewData and Strongly-Typed Views
- Partial Views
- View Models
- HTML and URL Helpers
- Tag Helpers
- View Components
- Client-Side Dependencies
- Microsoft Library Manager (LibMan)
- Razor Pages.

Module 9: HTML Forms

- Form Tag Helper
- Form Submissions
- Model Binding ntax

Module 10: Data Validation

- Introduction
- Data Annotations
- Model Binding
- Input Tag Helpers
- Validation Tag Helpers

Module 11: Blazor

- Server-Side vs. Client-Side
- Browser Support
- Forms and Validation
- Routing

Module 12: Application State

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- Client-Side vs. Server-Side
- HttpContext.Items
- Session State
- TempData

Module 13: Authentication

- Introduction
- ASP.NET Core Identity
- Cookie Middleware
- Authorization
- Claims-Based Authorization

Module 14: Error Handling

- Best Practices
- HTTP Error Status Codes
- Status Code Pages
- Developer Exception Page
- Exception Filters

Module 15: Logging

- Configuration
- ILogger
- Serilog and Seq

Module 16: Testing

- Unit Testing
- xUnit
- Testing Controllers
- Integration Testing

Module 17: Web APIs

- Introduction
- CRUD Operations
- Bad Requests
- Cross-Origin Resource Sharing (CORS)

Module 18: Remote Procedure Calls (RPC)

- Real-Time Apps with SignalR

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- SignalR Clients
- gRPC Services
- gRPC vs. HTTP Services

Module 19: Using Docker

- Advantages of Containerized Applications
- Docker Fundamentals
- Microsoft ASP.NET Core Docker Images
- Running a Container
- Visual Studio Support
- AWS and

Module 20: Deployment

- Page and View Compilation
- Publishing
- Load Balancers and Reverse Proxies