



# ASP.NET Core 5.0 Development

Course ID #: 7000-617-ZZ-Z

Hours: 28

## Course Content

### Course Description:

In this course, you will cover an introduction to ASP.NET Core development and the skills necessary to design and build well-architected web and service-oriented applications that follow the MVC design pattern. This course does introduce new frameworks like gRPC and Blazor but does not include in-depth coverage of those topics.

### Prerequisites:

- Prior .NET experience and basic skills with HTML and JavaScript is assumed.
- ASP.NET 5 SDK (5.0.101 or later)
- Visual Studio 2019 (any edition) with Update 16.8 (or later)
- Postman application ([www.getpostman.com](http://www.getpostman.com))

### Target Audience:

### Topics:

#### Lesson 1: Introduction

- Evolution of .NET and .NET Core
- .NET SDKs and Runtimes
- Visual Studio and Visual Studio Code

#### Lesson 2: .NET Core SDK

- Installation
- Version Management
- Command-Line Interface (CLI)

#### Lesson 3: What's New in C# 9

- Introduction
- Record Types
- Init Only Setters
- Nullable Reference Types

#### Lesson 4: ASP.NET Core Application Architecture

- NuGet Packages
- Application Startup
- Hosting Environments
- Middleware and the Request Pipeline
- Services and Dependency Injection

- MVC vs. Razor Pages

#### Lesson 5: Application Configuration

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

#### Lesson 6: Request Routing

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

#### Lesson 7: Models

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



# ASP.NET Core 5.0 Development

Course ID #: 7000-617-ZZ-Z

Hours: 28

## Lesson 8: Controllers

- Responsibilities
- Requirements and Conventions
- Dependencies
- Action Results

## Lesson 9: Views

- Responsibilities
- Conventions
- Razor Syntax
- Layouts
- ViewData and ViewBag
- Strongly-Typed Views
- Partial Views
- HTML and URL Helpers
- Tag Helpers
- View Components
- Client-Side Dependencies
- Razor Pages
- View Models

## Lesson 10: HTML Forms

- Form Tag Helper
- Input Tag Helper
- Select Tag Helper
- Form Submissions
- Model Binding

## Lesson 11: Data Validation

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

## Lesson 12: Application State

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

## Lesson 13: Error Handling

- Best Practices

- HTTP Error Status Codes
- Status Code Pages
- Developer Exception Page

## Lesson 14: Logging

- Configuration
- ILogger
- Serilog and Seq

## Lesson 15: Testing

- Unit Testing
- xUnit
- Testing Controllers
- Integration Testing

## Lesson 16: Authentication

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

## Lesson 17: Web APIs

- API Controllers
- Testing APIs
- CRUD Operations
- OpenAPI (Swagger)
- Cross-Origin Resource Sharing (CORS)

## Lesson 18: Remote Procedure Calls (gRPC)

- Introduction
- Protobuf
- Server
- Client
- Limitations

## Lesson 19: Blazor

- Razor Components
- Blazor Server
- Blazor WebAssembly

## Lesson 20: Deployment



# ASP.NET Core 5.0 Development

Course ID #: 7000-617-ZZ-Z

Hours: 28

- dotnet publish
- Kestrel
- IIS
- Docker

## Lesson 21: Conclusion

Register for this class by visiting us at:

[www.tcworkshop.com](http://www.tcworkshop.com) or calling us at 800-639-3535

## Policies: Course Registration, Cancellation, Refund and Complaint Resolution

:For more information regarding administrative policies such as complaint and refund, please contact our offices at 800-639-3535 or visit us at: [www.tcworkshop.com](http://www.tcworkshop.com)

### NASBA Information:

**Level:** Advanced

**Attendance Requirement:** To be awarded the full credit hours, you must sign in for the course and attend the entire course.

**Fields:** Computer Software & Applications

**CPEs:** 28

### Official National Registry Statement:

The Computer Workshop is registered with the National Association of State Boards of Accountancy (NASBA) as a sponsor of continuing professional education on the National Registry of CPE Sponsors. State boards of accountancy have final authority on the acceptance of individual courses for CPE credits. Complaints regarding registered sponsors may be submitted to the National Registry of CPE Sponsors through its website: [www.nasbaregistry.org](http://www.nasbaregistry.org)

NOTE: Since our information is in multiple places on our web site or in PDF format that is sent to clients, we have provided our normal course content with the NASBA Information added along with links to our policy page on the web. We will add our name to the Official National Registry Statement after we are approved.