

## ASP.NET MVC Programming for Experienced C# Programmers Using .NET6

**Duration:** 3 Days (*Face-to-Face & Remote-Live*), or 21 Hours (*On-Demand*)

**Price:** \$1695 (*Face-to-Face & Remote-Live*), or \$1495 (*On-Demand*)

**Discounts:** We offer multiple discount options. [Click here](#) for more information.

**Delivery Options:** Attend face-to-face in the classroom, [remote-live](#) or [on-demand training](#).

### Students Will Learn

- Architecture of ASP.NET MVC web applications
- Using Visual Studio's project templates to create specific types of MVC applications
- Using MVC's Dependency Injection container to create application-scoped services
- Creating controllers containing action methods to process HTTP requests
- Using the Razor view engine to design ASP.NET MVC views to render responses to HTTP requests
- Creating data model classes manually and by using the Entity Framework to populate strongly-typed views
- Creating custom ASP.NET MVC routes
- Using Visual Studio's tools to create and run tests for ASP.NET MVC applications
- Securing and deploying ASP.NET MVC web applications

### Course Description

This course provides students with hands on experience using Visual Studio to create dynamic web applications using ASP.NET MVC, C#, and the .NET 6 Framework. Students should already have a working knowledge of C# before taking this course.

Students learn how to leverage the power of the Model-View-Controller design pattern with the ASP.NET MVC design pattern to separate the layers of a web application. Students will use the Razor view engine to design a user interface, and will learn how to build models to manage an application's data layer using both the Entity Framework and LINQ. Students also learn how to build controllers containing action methods to manage communication between views and models.

Other topics include data scaffolding; URL routing; implementing security; unit testing; and deploying ASP.NET MVC applications. Comprehensive labs provide the students with experience creating, debugging, testing and deploying dynamic ASP.NET MVC applications

with .NET6.

This course provides thorough coverage of the use of **ASP.NET MVC** for creation of web applications. Students requiring additional coverage of **ASP.NET Web Forms, Windows Forms, WCF** or **Windows Presentation Foundation** should contact HOTT or refer to HOTT's [complete course listing](#) for additional training courses.

**Students who are not familiar with the C# language should take the 5-day [ASP.NET MVC Programming Using C# and .NET6](#) course instead.**

**Students who are already familiar with C# language syntax and wish to learn about ASP.NET MVC applications in the context of .NET Frameworks 4.0 through 4.8 may want to take the 3-day [ASP.NET MVC Programming for Experienced C# Programmers](#) class instead.**

## Course Prerequisites

Knowledge of fundamental HTML syntax is helpful, but not required. Prior experience with C# is required.

## Course Overview

### Overview of ASP.NET MVC

- Overview of Model-View-Controller Design Pattern
- ASP.NET MVC Application Architecture
- Understanding the MVC Execution Process
- Building an ASP.NET MVC Application Using Visual Studio
- Visual Studio MVC Project Templates
- Using a `web.config` File

### Developing Views

- Creating Views
- Using the Razor View Engine
- Using ViewBag to Pass Controller Data
- Using HTML Helpers

### Developing Controllers

- Creating Controllers
- Defining Action Methods
- Working with HTML Form Data
- Mapping URLs to Action Methods
- Understanding `ActionResult` Types
- Using Model Binding

### MVC Unit Testing

### Startup and Services

- Fundamentals of Dependency Injection
- Using the default DI container
- Using the Startup file
- Creating Services and Controlling Service Lifetime
- Building an ASP.NET MVC Application Using Visual Studio Project Templates
- Using Bootstrap CSS for the UI

### Developing Models

- Creating Model Classes
- Working with Strongly-Typed Views
- Validating User Input
- Using Data Annotations for Display
- Working with the Entity Framework
- Working with LINQ to SQL
- Using Scaffolding to Generate Views

### Routing Control

- Understanding Routing in ASP.NET MVC
- Defining URL Routes
- Registering Routes
- Adding Constraints to Routes
- Using Attribute Routing

### Securing MVC Applications

- Test-Driven Development
- Designing Test Cases
- Creating Unit Tests
- Using xUnit for Testing
- Using Visual Studio Test Explorer
- ASP.NET Security
- Securing the Application with Individual Accounts
- Securing the Application with Windows Accounts
- Using Attributes to Leverage Access
- Defending against Attacks
  - Cross-site Scripting
  - Session Hijacking
  - SQL Injection
  - Input Forgery

## **Deploying ASP.NET MVC Applications**

- Understanding the Kestrel Web Server
- Using Publish Profiles
- Choosing a Deployment Destination
- App Config using Environments
- Configuring IIS for ASP.NET MVC Deployment

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