C# / .Net Core Developer SkillJourney

C# Web Developer / Developing ASP.Net Core MVC Web Applications (20486) (TTCN20486)

Fast Track to C# for OO Developers | Core Skills and Best Practices Required to Create Windows Applications using Visual C#

Course Snapshot

- **Course:** Developing ASP.Net Core MVC Web Applications (Latest Editions) (20486) (TTCN20486)
- **Duration:** 5 days
- **Audience:** This course is intended for experienced developers who already have programming experience in C# and understand the concepts of object-oriented programming.
- **Format / Hands-on:** This course combines engaging instructor-led presentations and practical demonstrations with hands-on programming exercises, challenge labs, use case exploration and engaging group activities. Student machines are required.
- **Flexible Delivery Options**: This course can be delivered for your team or organization online-live (virtual), onsite in-person, self-paced or across our immersive blended learning experience platform (LXP).
- **Public Schedule**: This course is currently available on our Public Open Enrollment Schedule.
- **Customizable**: We're flexible! This course agenda, topics, labs, hours and delivery modalities can be adjusted to target your specific training skills objectives, tools and learning goals. Please ask for details.

Overview

C# Web Developer / Developing ASP.Net Core MVC Web Applications is a five-day intensive program is crafted to facilitate the mastery of ASP.Net Core and C#, essential components in the modern developer's toolkit. These technologies serve as the backbone for a diverse array of web applications, enabling participants to craft sophisticated, scalable solutions that can significantly enhance organizational operations and drive innovation.

The focus will be on coding activities that enhance the performance and scalability of the Web site application. Throughout the course you'll explore core topics including the foundations of Microsoft Web Technologies, the implementation of MVC architecture, and the deployment of robust web applications using Entity Framework Core. You'll gain hands-on experience and practice solving practical industry challenges, applying new skills in real-time by constructing models, configuring middleware, and integrating front-end technologies to deliver seamless user experiences. You'll also explore and apply the newest features of C# and tackle advanced subjects such as state management, security enhancements, and two-way communication using SignalR. You'll also dive into the pragmatic aspects of web development, exploring testing and troubleshooting, utilizing web APIs, and the nuances of on premise hosting and deployment.

You'll exit this course equipped with core skills needed to apply on the job, right after the training ends. You'll be able to deliver state-of-the-art web solutions and dynamic and responsive web applications, optimized for performance and built with an emphasis on clean, maintainable code.

This independent course aligns with the topics and skills in Microsoft Official Curriculum (MOC) course 20486.

Learning Objectives

Our engaging instructors and mentors are highly experienced practitioners who bring years of current "on-the-job" experience into every classroom. Working in a hands-on learning environment, guided by our expert team, attendees will learn to:

- **Design and Implement Web Applications:** Confidently plan and construct ASP.Net Core MVC web applications, ensuring a solid understanding of the interplay between models, controllers, and views, which forms the foundation of robust web application architecture.
- **Write and Deploy Secure Code:** Write secure ASP.Net code with an emphasis on authentication and authorization strategies. Participants will be capable of crafting applications that not only perform efficiently but also adhere to best practices in security, protecting data integrity and user privacy.

- **Apply Advanced C# Features:** Utilize the advanced features of C# effectively, such as asynchronous programming with async/await, leveraging tuples and records for more expressive code, and implementing nullability features to improve code safety and reliability.
- **Integrate Entity Framework Core:** Harness the power of Entity Framework Core for data-driven applications, enabling smooth interaction with databases and the ability to perform CRUD operations seamlessly within web applications.
- **Develop and Consume Web APIs:** Create RESTful Web APIs using ASP.Net Core and consume them from both server-side and client-side code, facilitating communication between different software applications and services in a distributed environment.
- **Troubleshoot and Optimize Web Applications:** Apply testing methodologies to isolate and resolve issues in MVC components, implement exception handling strategies for graceful failure management, and use logging to monitor application health, thus ensuring applications are not only functional but also resilient and maintainable.

Need different skills or topics? If your team requires different topics or tools, additional skills or custom approach, this course may be further adjusted to accommodate. We offer additional C#, .Net Core and Visual Studio application development, web development, SOLID development, test driven development, .Net Secure coding, services and other related topics that may be blended with this course for a track that best suits your needs. Please inquire for details.

Audience & Pre-Requisites

This course is intended for experienced professional web developers who use Microsoft Visual Studio in an individual-based or team-based, small-sized to large development environment. Candidates for this course are interested in developing advanced web applications and want to manage the rendered HTML comprehensively. They want to create websites that separate the user interface, data access, and application logic. This course is NOT for non or new developers.

Students should have incoming practical skills in the below technologies:
- TTCN20483 Programming in C# | Creating Apps in C# and .Net Core / Latest Edition (20483)
- TT4003   Introduction to HTML, CSS and JavaScript.
- Visual Studio 2022 (or later).
- Querying and manipulating database data.
- Basic XML and JSON data structures.

Next Steps / Related Courses | Microsoft Developer Training Suite
Below is a subset of our follow on courses in .Net development, web development, SOLID design, .Net services, .Net secure coding and others. Please visit our site or contact us for the full course listing and next-step recommendations.
- TTCN10975 Introduction to Programming in C# (For C# and .Net Core / Latest Edition) (10975)
- TTCN20483 Programming in C# | Creating Apps in C# and .Net Core / Latest Edition (20483)
- TTCN2155   Intermediate C# | Patterns, Generics, Threading, Database, Entity Framework, UI & More
- TTCN20486 Developing ASP.Net Core MVC Web Applications / Latest Edition (20486)
- TT8320-N   .Net Secure Coding Camp | Attacking and Securing .Net Web Apps (for .Net Core / Latest Edition)

Enhanced Learning Services: Please also ask about our robust Learning Experience Platform (LXP), Skills Assessment & Skills Prep Services, Skills Immersion Programs & Camps, Coaching and Mentoring Services and Extended Learning Support programs.

Course Topics / Agenda

Please note that this list of topics is based on our standard course offering, evolved from typical industry uses and trends. We will work with you to tune this course and level of coverage to target the skills you need most. Course agenda, topics and labs are subject to adjust during live delivery in response to student skill level, interests and participation.

Module 1: Overview of .Net (core) & ASP.Net
- Explore the variety of technologies available in the Microsoft web stack.
- Explore different programming models available for developers in ASP.NET.
- Role of ASP.NET Core MVC in the web technologies stack, and how to use ASP.NET Core MVC to build web applications.
- Differences between MVC models, MVC controllers, and MVC views.

Module 2: Review of C# and New Features
- Design and implement a basic class
- New features
- Raw strings
- Top-level statements
- Global usings
- Tuples
- Record type specifiers
- Deconstruction
- Null operators & null reference types
- Async/Await

Module 3: Designing ASP.NET Core MVC Web Applications
Lessons
- Planning in the Project Design Phase
- Designing ASP.NET Core MVC Web Applications: Plan the overall architecture of an ASP.NET Core MVC web application and consider aspects such as state management.
- Designing Models, Controllers and Views: Plan the models, controllers, and views that are required to implement a given set of functional requirements.

Module 4: Configure Middleware and Services in ASP.NET Core
- Configuring Middleware: Use existing middleware to set up an ASP.NET Core application.
- Create your own middleware and use it to define custom behavior.
- Understand the basic principles behind Dependency Injection, and how it is used in ASP.NET Core.
- Configuring Services: Learn how to create a custom service, configure its scope, and inject it to both middleware and ASP.NET Core MVC controllers.

Module 5: Developing Controllers
- Writing Controllers and Actions
- Add a controller to a web application that responds to user actions that are specified in the project design.
- Configuring Routes
- Add routes to the ASP.NET Core routing engine and ensure that URLs are user-friendly in an MVC web application.

Module 6: Developing Views
- Creating Views with Razor Syntax: Create an MVC view and add Razor markup to it to display data to users.
- Using HTML Helpers and Tag Helpers: Use HTML helpers and tag helpers in a view.
- Reusing Code in Views: Reuse Razor markup in multiple locations throughout an application.

Module 7: Using Layouts, CSS and JavaScript in ASP.NET Core MVC
- Using Layouts: Apply a consistent layout to ASP.NET Core MVC applications.
- Using CSS and JavaScript: Add JavaScript code to your web application.

Module 8: Developing Models
- Creating MVC Models: Add a model to an MVC application and write code in it to implement the business logic.
- Working with Forms
- Use display and edit data annotations.
- Validating user input server and client-side with data annotations.

Module 9: Using Entity Framework Core in ASP.NET Core
- Introduction to Entity Framework Core
- Working with Entity Framework Core
- Connect an application to a database to access and store data.
- Use Entity Framework Core to connect to Microsoft SQL Server

Module 10: Testing and Troubleshooting
- Run unit tests against the Model–View–Controller (MVC) components, such as model classes and controllers, and locate potential bugs.
- Build a Microsoft ASP.NET Core MVC application that

handles exceptions smoothly and robustly.
- Run logging providers that benefit your applications and run them by using a common logging API.
- Testing MVC Applications
- Implementing an Exception Handling Strategy
- Logging MVC Applications

Module 11: Managing Security
- Add basic authentication to your application.
- Configure Microsoft ASP.NET Core Identity.
- Add basic authorization to your application.
- Know how security exploits work and how to better defend against them.
- Authentication in ASP.NET Core
- Authorization in ASP.NET Core

Module 12: Performance and Communication
- Managing State: Use state management technologies to improve the client experience, by providing a consistent experience for the user.
- Implement two-way communication by using SignalR, allowing the server to notify the client when important events occur.

Module 13: Implementing Web APIs
- Introducing Web APIs
- Developing a Web API
- Create services by using ASP.NET Core Web API.

- Call a Web API from server-side code and jQuery.

Module 14: Hosting and Deployment
- On-premise hosting and deployment
- How to Host and Deploy an ASP.NET Core MVC application on IIS.

Module 15 Accessing Remote Data
- Accessing Data Across the Web
- Send data to and receive data from restful services and other remote data sources.

Module 16: Overview of Blazor

Module 17: Improving Application Performance and Responsiveness
- Implementing Multitasking: Use the async/await to implement multitasking.
- Performing Operations Asynchronously

Module 18: Creating Reusable Types and Assemblies
- Examining Object Metadata
- Use reflection to inspect and execute assemblies.
- Create and consume custom attributes.

Setup Made Simple! Learning Experience Platform (LXP)

All applicable course software, digital courseware files or course notes, labs, data sets and solutions, live coaching support channels, CodeCoach.AI anytime tutor access, and rich extended learning and post training resources are provided for you in our "easy access, single source, no install required" online **Learning Experience Platform (LXP),** remote lab and content environment. Access periods vary by course. We'll collaborate with you to ensure your team is set up and ready to go well in advance of the class. Please inquire about set up details and options for your specific course of interest.

For More Information

For more information about our training services (instructor-led, self-paced or blended), collaborative coaching services, robust Learning Experience Platform (LXP), Career Experiences, public course schedule, partner programs, courseware licensing options or to see our complete list of course offerings, solutions and special offers, please visit us at **www.triveratech.com**, email **Info@triveratech.com** or call us toll free at **844-475-4559.** Our pricing and services are always satisfaction guaranteed.

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LEARNING PLAN DEVELOPMENT ● SKILLS IMMERSION PROGRAMS / RESKILLING / NEW HIRE / BOOT CAMPS
PARTNER & RESELLER PROGRAMS ● CORPORATE TRAINING MANAGEMENT ● VENDOR MANAGEMENT SERVICES

Trivera Technologies is a Woman-Owned Small-Business Firm

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