

**ASP.NET Core with Orchard Core CMS**

**Course Number:** ASPNC-108
**Duration:** 5 days

**Overview**

[ASP.NET Core](https://dotnet.microsoft.com/learn/aspnet/what-is-aspnet-core) is Microsoft’s modern, cross-platform web development framework. [Orchard Core](https://www.orchardcore.net/) is a free, open source, community-driven framework and web content management system (CMS) that extends ASP.NET Core with a wealth of capabilities.

In this ASP.NET Core with Orchard Core CMS training, attendees learn how to use Orchard’s various built-in features for content and media management, access control and auditing, scripting, and other tasks. Students extend Orchard with custom modules and themes written in C# (including Razor syntax), HTML, CSS, and JavaScript, following the MVC design pattern.

**Note:** This course runs 6 hours each day for 5 days.

**Prerequisites**

A solid understanding of using Visual Studio, Git (or some other source control system), C#, and ASP.NET Core MVC is strongly advised. A basic level of client-side web development (HTML, CSS, and JavaScript) is recommended.

**Materials**

All Orchard Core training students receive comprehensive courseware.

**Software Needed on Each Student PC**

The minimally required software is Visual Studio 2019 (any edition) or later installed with .NET Core development tools, as well as [SQLite Browser](https://sqlitebrowser.org/dl/) for looking into Orchard’s database. Certain Visual Studio extensions and other tools can further aid development; please see the page on the recommended development environment on [Orchard Dojo](https://orcharddojo.net/orchard-resources/CoreLibrary/DevelopmentGuidelines/DevelopmentEnvironment).

**Objectives**

* Understand Orchard Core architecture and basic usage
* Manage Orchard Core sites and content
* Customize Orchard Core
* Maintain and troubleshoot Orchard Core
* Develop themes, modules, and custom content
* Optimize Orchard Core performance
* Work on Orchard Core apps as a team

**Outline**

* Introduction
* Core Concepts and Basic Usage
	+ Orchard ecosystem
	+ Showcasing complex/notable Orchard apps
	+ Architectural overview
	+ How do I get my own Orchard instance?
	+ Using Orchard as a full, decoupled, and headless CMS
	+ Installing Orchard (running the setup): choosing a database engine (and its implications), recipes
	+ Basic site settings
* Basic Site Management
	+ Content model and content management
	+ Themes and modules
	+ User management, roles, and permissions
* Intermediate Content Management
	+ Taxonomies
	+ Widgets in Layers
	+ Navigation
* Advanced Content Management
	+ Search and indexing
	+ Forms, Liquid and Workflows
	+ Auditing content with Audit Trail
* Expert Content Management
	+ Deployment and recipes
	+ Queries
	+ SQL queries
	+ Other content type metadata: Listable, Creatable, Stereotypes
* Customization Features
	+ Templates
	+ Multi-tenancy
	+ Writing recipes
	+ Localization
* Basic Maintenance and Troubleshooting
* Getting Started with Theme Development
	+ Structure
	+ Code generation templates
	+ Shapes
	+ Static resource
* Advanced Theme Development
	+ Placement.json
	+ Approaches to building a new theme
* Getting Started with Module Development
	+ Structural overview of the Orchard source
	+ Module structure
	+ Code generation templates
	+ Integrating with the current theme
	+ Dependency injection and basic services
* Basic Techniques in Module Development
	+ Displaying entities with display management
	+ Basic document storage
	+ Abstracted file storage
* Developing Custom Content
	+ Parts and their comparison to entities, part data storage
	+ Content type and content part migrations
	+ Drivers
	+ Editor and display shapes
	+ Handlers
	+ Placement
* Intermediate Techniques in Module Development
	+ Custom routes with attribute routing and route maps
	+ Filters
	+ Events
	+ Permissions and authorization
	+ Background tasks
* Advanced Techniques in Module Development
	+ Ways of storing settings
	+ Caching
	+ Recipes inside modules
* Complementary Topics of Module Development
	+ Writing tests
	+ Middlewares
	+ Integrating with client-side build pipeline
* Optimization
	+ Understanding the implications of basic built-in performance-related features:
	+ General guidelines
	+ Profiling with the Mini Profiler module
* Team Training - How to Work on Orchard Apps as a Team
	+ How to write code
	+ How to share code and other application data
	+ How to communicate
* Conclusion