ASP.NET Core Complete Course Outline (30 Lectures × 45 min)

Introduction & Setup (Lectures 1-3)

- Lecture 1: Introduction to ASP.NET Core Framework, .NET 6/7/8 Updates
- Lecture 2: Setting up Development Environment, .NET CLI, Project Structure
- Lecture 3: Middleware Pipeline, Request Processing in ASP.NET Core

MVC Architecture & Razor (Lectures 4-7)

- Lecture 4: Model-View-Controller Pattern Fundamentals
- Lecture 5: Creating Controllers and Actions, Routing Basics
- Lecture 6: Razor Views, Layouts, Partial Views, Tag Helpers
- Lecture 7: Model Binding, Validation, Data Annotations

Dependency Injection & Services (Lectures 8-10)

- Lecture 8: Dependency Injection Concept and Implementation
- Lecture 9: Scoped, Singleton, Transient Services
- Lecture 10: Configuration Management and Options Pattern

Entity Framework Core & Data Access (Lectures 11-15)

- Lecture 11: Introduction to Entity Framework Core and DbContext
- Lecture 12: Code-First and Database-First Approaches
- Lecture 13: CRUD Operations, LINQ Queries, and Migrations
- Lecture 14: Advanced EF Core – Relationships, Transactions, Concurrency
- Lecture 15: Optimizations and Performance Tuning for EF Core

Web API Development (Lectures 16-18)

- Lecture 16: RESTful API Basics and Controllers
- Lecture 17: API Versioning, Documentation with Swagger
- Lecture 18: Authentication and Authorization in APIs (JWT, OAuth)

Authentication, Authorization & Security (Lectures 19-21)

- Lecture 19: ASP.NET Core Identity, Role-based Access Control
- Lecture 20: Claims-based Authorization, Policy-based Access
- Lecture 21: Security Best Practices (Data Protection, HTTPS, CORS)

Advanced ASP.NET Core Features (Lectures 22-24)

- Lecture 22: Background Services, Hosted Services, and Worker Services
- Lecture 23: Logging, Monitoring, and Diagnostics (Serilog etc.)
- Lecture 24: Caching Strategies for Performance Improvement

Cloud Deployment & DevOps (Lectures 25-27)

- Lecture 25: Deploying ASP.NET Core Apps on Azure and AWS
- Lecture 26: Containerization with Docker and Kubernetes Basics
- Lecture 27: CI/CD Pipelines with GitHub Actions and Azure DevOps

Blazor and Frontend Integration (Lectures 28-29)

- Lecture 28: Introduction to Blazor Server and WebAssembly
- Lecture 29: Building Interactive Web UIs with Blazor Components

Capstone Project & Wrap-Up (Lecture 30)

- Lecture 30: End-to-End Project: Build, Test, and Deploy Enterprise Grade Application