

Section 1: Introduction to ASP.NET Web API

Overview of Web APIs and RESTful Services

Set up the environment and create a web api

- <https://app.pluralsight.com/library/courses/asp-dot-net-core-6-web-api-fundamentals/table-of-contents>
- <https://learn.microsoft.com/en-us/training/modules/build-web-api-aspnet-core/>
- [Tutorial: Create a controller-based web API with ASP.NET Core](#)

Section 2: Core Concepts To Understand

1. Controllers and Routing

- Understanding controllers, actions, and routing mechanisms.
- <https://learn.microsoft.com/en-us/aspnet/web-api/overview/web-api-routing-and-actions/routing-in-aspnet-web-api>

2. Dependency Injection (DI)

- Implementing DI to manage dependencies and improve testability.
- **Resource:** [Dependency Injection in ASP.NET Core](#)

3. Model Binding and Validation

- Binding HTTP request data to models and validating user input.
- **Resource:** [Model Binding in ASP.NET Core](#)

Section 3: Data Access and Entity Framework Core

1. Introduction to Entity Framework Core

- Setting up EF Core and connecting to a database.
- **Resource:** [Getting Started with EF Core](#)
- <https://app.pluralsight.com/library/courses/ef-core-8-fundamentals/table-of-contents>

2. Implementing CRUD Operations

- Creating, reading, updating, and deleting data using EF Core. [The C# Academy](#)
- **Resource:** [ASP.NET Web API CRUD Operations - .NET8 and Entity Framework Core Tutorial](#)

Section 4: Advanced Topics

1. Middleware and the Request Pipeline

- Understanding middleware components and their role in request processing.
- **Resource:** [ASP.NET Core Middleware](#)

2. Error Handling and Logging

- Implementing global error handling and logging mechanisms.
- **Resource:** [Error Handling in ASP.NET Core](#)

3. Asynchronous Programming

- Utilizing async and await for non-blocking operations.
- **Resource:** [Asynchronous Programming in C#](#)

Section 5: Security and Testing

1. Authentication and Authorization

- Securing APIs using authentication and authorization techniques.
- **Resource:** Authentication and Authorization in ASP.NET Web API

2. Testing APIs

- Writing unit tests for API controllers and using tools like Postman for manual testing.
- **Resource:** [Testing Controller Logic in ASP.NET Web API 2](#)

Week 6: Documentation and Deployment

1. API Documentation with Swagger

- Generating interactive API documentation using Swagger/OpenAPI.
- **Resource:** [ASP.NET Core web API documentation with Swagger / OpenAPI](#)

2. Deployment Considerations

- Deploying ASP.NET Core Web APIs to various environments. [Pluralsight](#)
- **Resource:** [Host and deploy ASP.NET Core](#)