# ASP.NET Web API

## Chapter 1: Introduction to Web APIs

* ASP.NET Web API What is a Web API
* ASP.NET Web API REST vs SOAP Understanding the Difference
* ASP.NET Web API HTTP Verbs and RESTful Design Principles
* Overview of ASP.NET Web API Framework
* ASP.NET Web API Setting Up Development Environment in Visual Studio

## Chapter 2: Creating Your First ASP.NET Web API

* ASP.NET Web API Creating a Web API Project Framework and Core
* ASP.NET Web API Understanding Controllers and Routing
* ASP.NET Web API Returning Data using Action Results
* ASP.NET Web API Attribute Routing vs Conventional Routing
* ASP.NET Web API Consuming the API using Postman and Browser

## Chapter 3: HTTP Methods and CRUD Operations

* ASP.NET Web API GET, POST, PUT, DELETE Methods Explained
* ASP.NET Web API Implementing CRUD with Entity Framework
* ASP.NET Web API Model Binding and Validation
* ASP.NET Web API Using Data Transfer Objects (DTOs)
* ASP.NET Web API Returning HttpResponseMessage vs IActionResult

## Chapter 4: Routing and Versioning

* ASP.NET Web API Custom Routes and Route Constraints
* ASP.NET Web API URI based Versioning
* ASP.NET Web API Query String and Header Versioning
* ASP.NET Web API Deprecation and Compatibility Handling

## Chapter 5: Dependency Injection and Services

* ASP.NET Web API Introduction to Dependency Injection in .NET
* ASP.NET Web API Registering Services with the IoC Container
* ASP.NET Web API Service Lifetimes Transient, Scoped, Singleton
* ASP.NET Web API Using Repositories and Service Layers

## Chapter 6: Authentication and Authorization

* ASP.NET Web API Introduction to Authentication Mechanisms
* ASP.NET Web API Using Basic Auth, Token Auth, JWT
* ASP.NET Web API Role Based and Policy Based Authorization
* ASP.NET Web API Implementing ASP.NET Identity in Web API
* ASP.NET Web API Securing Endpoints using Authorize Attribute

## Chapter 7: Exception Handling and Logging

* ASP.NET Web API Global Exception Handling using Middleware and Filters
* ASP.NET Web API Custom Exception Filters
* ASP.NET Web API Structured Logging with Serilog and NLog
* ASP.NET Web API Using ILogger Interface
* ASP.NET Web API Logging to File, Console, and Database

## Chapter 8: Input Validation and Data Annotations

* ASP.NET Web API Using ModelState for Validation
* ASP.NET Web API Data Annotations and Custom Validation Attributes
* ASP.NET Web API FluentValidation Integration
* ASP.NET Web API Handling Validation Errors in API Responses

## Chapter 9: API Response Formatting

* ASP.NET Web API Understanding Content Negotiation
* ASP.NET Web API Returning JSON and XML
* ASP.NET Web API Customizing Action Results and Status Codes
* ASP.NET Web API Wrapping Responses in Standard Format
* ASP.NET Web API Pagination and Metadata in Responses

## Chapter 10: Advanced Features

* ASP.NET Web API File Upload and Download via Web API
* ASP.NET Web API Rate Limiting and Throttling
* ASP.NET Web API Cross-Origin Resource Sharing Setup
* ASP.NET Web API Output Caching and In Memory Caching
* ASP.NET Web API Background Jobs with Hosted Services

## Chapter 11: Swagger/OpenAPI Integration

* ASP.NET Web API What is Swagger and Why Use It
* ASP.NET Web API Adding Swashbuckle to Web API Project
* ASP.NET Web API Configuring Swagger UI and Annotations
* ASP.NET Web API Grouping and Versioning in Swagger
* ASP.NET Web API JWT Auth Support in Swagger

## Chapter 12: Deployment and Hosting

* ASP.NET Web API Publishing Web API to IIS, Azure, Docker
* ASP.NET Web API Environment-Based Configuration
* ASP.NET Web API Using AppSettings and Secrets
* ASP.NET Web API Using Application Insights for Monitoring