

## **Module 1: Introduction to ASP.NET Framework**

1. Overview of ASP.NET Framework
2. Understanding the MVC (Model-View-Controller) architecture
3. Setting up the development environment (Visual Studio, .NET Framework)
4. Creating a new ASP.NET MVC project

## **Module 2: Building Models**

1. Introduction to Models in ASP.NET MVC
2. Creating Entity Classes
3. Data Annotations for Validation
4. Working with Entity Framework for Database Connectivity

## **Module 3: Creating Views**

1. Introduction to Views in ASP.NET MVC
2. Using Razor Syntax for Dynamic Content
3. Layouts and Partial Views
4. HTML Helpers for Form Elements

## **Module 4: Controller and Routing**

1. Understanding Controllers and Actions
2. Defining Routes in ASP.NET MVC
3. Handling HTTP Requests (GET, POST, PUT, DELETE)
4. Implementing CRUD Operations in Controllers

## **Module 5: Working with Data**

1. Integrating Entity Framework for Data Access
2. Repository Pattern for Data Layer Abstraction
3. LINQ (Language Integrated Query) for Data Manipulation
4. Database Migrations and Code-First Approach

## **Module 6: Implementing CRUD Operations**

1. Creating Views for CRUD Operations
2. Implementing Create, Read, Update, and Delete actions in Controllers
3. Form Validation and Error Handling
4. Displaying Data in Views

## **Module 7: Security and Authentication**

1. Authentication and Authorization in ASP.NET MVC
2. Implementing User Registration and Login Functionality
3. Role-Based Access Control (RBAC)
4. Securing Controllers and Actions

## **Module 8: Advanced Topics**

1. Working with Ajax and jQuery for Asynchronous Operations
2. Implementing Search and Pagination Functionality
3. Error Logging and Exception Handling
4. Performance Optimization Techniques