

Curriculum for .NET Core Website Development

Module 1: Introduction to .NET Core

- Understanding the .NET Core framework
- Setting up the development environment
- Basic concepts of C# programming language

Module 2: Building Web Applications with ASP.NET Core

- Introduction to ASP.NET Core MVC
- Creating controllers and views
- Working with Razor syntax
- Handling HTTP requests and responses
- Using HTML helpers and tag helpers
- Implementing form handling and validation

Module 3: Data Access with Entity Framework Core

- Introduction to Entity Framework Core
- Configuring database connections
- Creating and migrating database schemas
- Querying data using LINQ
- Implementing CRUD operations

Module 4: Authentication and Authorization

- Introduction to authentication and authorization
- Implementing authentication with Identity
- Managing user roles and permissions
- Securing web applications with policies and claims

Module 5: RESTful Web Services with Web API

- Introduction to Web API
- Creating RESTful endpoints
- Implementing CRUD operations
- Handling HTTP status codes and error responses
- Consuming Web API endpoints in MVC applications

Module 6: Frontend Development with JavaScript and CSS

- Introduction to JavaScript and CSS
- Working with client-side frameworks (e.g., Bootstrap)
- Implementing client-side validation
- Enhancing user interface with JavaScript libraries (e.g., jQuery)

Module 7: Testing and Deployment

- Unit testing with xUnit and Moq
- Integration testing with TestServer
- Continuous integration and deployment (CI/CD) using Azure DevOps or GitHub Actions
- Deployment strategies for .NET Core applications

Module 8: Advanced Topics

- Performance optimization techniques
- Working with asynchronous programming
- Handling security vulnerabilities (e.g., SQL injection, XSS)
- Best practices for code maintainability and scalability