

.NET Training Course Syllabus



1 Course Overview

Learn .NET development, including C# programming, object-oriented concepts, SQL Server, Entity Framework Core, ASP.NET Core MVC, and Web API. Gain practical skills to build web applications and REST APIs using modern .NET.

.NET is a popular platform from Microsoft for building business web applications, APIs and desktop software. Learning C# and ASP.NET Core gives you a clear path into software development roles in banks, product companies and IT services firms.

2 Course Highlights

- Core .NET training: C#, SQL Server, ASP.NET Core MVC and Web API
- Beginner-friendly start with hands-on projects in Visual Studio
- Hands-on practice with assignments in every module
- Resume building, mock interviews and placement guidance

3 Who Can Join

- Students and fresh graduates who want to start a career in .NET development
- Beginners who want to learn C# and web development with Microsoft technologies
- Testers and support engineers who want to move into development
- Working professionals who want to switch to software development

4 Course Syllabus

The course is divided into 7 modules. Each module combines concept sessions with hands-on practice.

MODULE 1 C# Programming Basics

- Introduction to .NET, the CLR and C#
- Installing Visual Studio and creating projects
- Variables, data types and operators
- Conditions and loops
- Methods and parameters
- Arrays and strings
- Debugging and exception handling



MODULE 2 Object-Oriented Programming and Advanced C#

- Classes, objects and constructors
- Encapsulation and access modifiers
- Inheritance and polymorphism
- Abstract classes and interfaces
- Collections and generics
- LINQ and lambda expressions
- File handling and async/await basics

MODULE 3 SQL Server and Database Concepts

- Relational databases and tables
- SQL queries: SELECT, INSERT, UPDATE and DELETE
- Joins and subqueries
- Group by and aggregate functions
- Stored procedures and views
- Indexes and transactions
- Database design and normalization

MODULE 4 ADO.NET and Entity Framework Core

- Data access in .NET
- ADO.NET basics: connection, command and reader
- Entity Framework Core overview
- Code First approach and migrations
- Models, DbContext and relationships
- CRUD operations with LINQ
- Async database calls and best practices

MODULE 5 Web Basics and ASP.NET Core MVC

- How the web works: HTTP and client-server model
- HTML5, CSS3 and Bootstrap
- ASP.NET Core project structure
- MVC pattern: models, views and controllers
- Routing and Razor views
- Forms, model binding and validation
- Layouts, partial views and tag helpers



MODULE 6 ASP.NET Core Web API and Authentication

- REST principles and API design
- Creating Web API controllers
- Testing APIs with Postman and Swagger
- Dependency injection
- Authentication with ASP.NET Identity
- JWT tokens and securing APIs
- Error handling and logging

MODULE 7 Deployment, Real-World Projects and Career Preparation

- Git and GitHub workflow
- Unit testing basics with xUnit
- Publishing and deploying to IIS or Azure App Service
- Mini project planning and development
- Final project presentation
- Common .NET interview questions
- Resume and portfolio preparation

5 Tools and Technologies Covered

C#, Visual Studio, ASP.NET Core MVC, Entity Framework Core, SQL Server, ADO.NET, LINQ, Web API, HTML5, CSS3 and Bootstrap, Postman and Swagger, Git and GitHub, Azure App Service (overview).

6 Hands-On Projects

Student Management System	MVC application with SQL Server and CRUD operations.
Online Shopping Application	Products, cart and orders with user login.
Employee Records Web API	REST API with Entity Framework Core and JWT security.
Library Management System	Roles, search, reports and database design.



7 Learning Outcomes

- Write programs using C# and object-oriented programming.
- Design and query databases using SQL Server.
- Use Entity Framework Core for data access.
- Build web applications using ASP.NET Core MVC.
- Create and secure REST APIs with ASP.NET Core Web API.
- Deploy .NET applications and prepare for interviews.

8 Career Opportunities

- .NET Developer
- C# Developer
- ASP.NET Core Developer
- Junior Software Developer
- Back-End Developer
- Software Trainee

9 Course Details

Duration	As per course schedule
Level	Beginner to Advanced
Mode	Online / Classroom
Prerequisites	Basic computer knowledge; no programming experience required
Certification	Course completion certificate
Support	Placement assistance and interview preparation

10 Frequently Asked Questions

Do I need prior experience to join?

No. The course starts from the basics, so beginners can join. The prerequisite listed in the course details is enough.

Will I get hands-on practice?

Yes. Every module includes practical sessions, assignments and a real-world project.

Do you provide placement support?

Yes. We provide resume building, mock interviews and placement guidance.



Can I attend online?

Yes. The course is available in both online and classroom modes.

11 Contact Information

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