

10 Weeks DotNet Training Syllabus

WEEK 1: Introduction to .NET

- Overview of .NET Framework and .NET Core
- Understanding C# Programming Language
- Setting up .NET Development Environment

WEEK 2: C# Programming Basics

- Variables, Data Types, and Operators
- Control Structures: Loops and Conditional Statements
- Methods and Functions

WEEK 3: Object-Oriented Programming (OOP) with C#

- Classes and Objects
- Inheritance, Encapsulation, Polymorphism
- Interfaces and Abstract Classes

WEEK 4: .NET Fundamentals

- Introduction to .NET Libraries and Assemblies
- Exception Handling in .NET
- File I/O Operations

WEEK 5: .NET Core and ASP.NET Core Basics

- Introduction to .NET Core
- Setting up ASP.NET Core Project
- Understanding Middleware and MVC Pattern

WEEK 6: ASP.NET Core Web Development

- Building Web APIs with ASP.NET Core
- CRUD Operations in ASP.NET Core

- Routing and Attribute Routing

WEEK 7: Entity Framework Core

- Introduction to Entity Framework Core (EF Core)
- Database Models and DbContext
- CRUD Operations with EF Core

WEEK 8: Advanced .NET Core Features

- Dependency Injection and Middleware
- Authentication and Authorization in ASP.NET Core
- Logging and Error Handling

WEEK 9: .NET Core and Cloud

- Deploying ASP.NET Core Apps to Azure
- Introduction to Docker and Containerization
- Microservices Architecture with .NET Core

WEEK 10: Testing, Deployment, and Best Practices

- Unit Testing in .NET Core
- Continuous Integration and Deployment (CI/CD)
- Best Practices and Design Patterns in .NET

AFTER COURSE ASSIGNMENTS:

1. .NET Core Web Application: Students will develop a complete web application using ASP.NET Core, Entity Framework Core, and C#. This application should include user authentication, database operations, and other features learned during the course.
2. RESTful API with .NET Core: Students will design and implement a RESTful API using ASP.NET Core. The API should support CRUD operations for a specific data model and be documented with clear endpoints and examples.

3. **Code Review and Refactoring:** Students will select one of their projects or assignments and perform a code review and refactoring. This assignment will help them understand the importance of clean, maintainable code in the industry and improve their coding skills.

By the end of this .NET course and assignments, students should be proficient in developing scalable web applications, building RESTful APIs, and deploying .NET Core projects. They will be well-prepared to start their careers as .NET developers in the IT industry.

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.NET
Core