

Course Duration: 30hrs
Class Duration: 1.5hrs

Target Audience:

Anyone who wants to learn C# programming language and modern .NET / .NETCore development stack.

Prerequisites:

- Basic programming concepts be it procedural SQL, C or object-oriented C++/Java.
- (Optional) Basic knowledge of Javascript, CSS and HTML (We will start from ZERO of web though)
- Eager to learn new things and challenge instructor time to time

IDE/SDK/Tools:

VS Code latest stable with C# extensions (OmniSharp) and .NET Core debugger, .NET Core 3.0 SDK

Course of contents

1. Module A - Introduction to .NET and .NET Core - 1.5hrs (1 Class)

- ☐ .NET and Its history
- ☐ .NET SDK and Runtimes
- ☐ .NET Languages
- ☐ Code Execution: MSIL and CLR
- ☐ Current trends and Future of .NET
- ☐ Initial setup and get ready for Module B

2. Module B - C# Programming Language - 15 hrs (10 Classes)

- ☐ Project templates on .NET Core
- ☐ Introduction to C#, its Evolution and versions
- ☐ C# program structure: Classes, Objects and Namespaces
- ☐ Data Types: Signed, Unsigned and nullable
- ☐ Constants, Enums
- ☐ Arrays (Part of collections)
- ☐ Conditionals & Switches
- ☐ Loops
- ☐ Methods: Syntax and arguments, optional parameters, named arguments, tuples, ref and out, overloading, overriding
- ☐ Properties and Attributes
- ☐ Collections and Generics
- ☐ File IO
- ☐ LINQ
- ☐ Advanced constructs:

- ❑ Delegates (Custom and Build-in ones, more focused on WHY delegates) and Events
- ❑ Anonymous Types, Extension methods
- ❑ Generics: Classes and Methods
- ❑ Parallel Programming
- ❑ Asynchronous Programming

3. Module C - Web programming with ASP.NET Core and C# - 13.5 hrs (9 Classes)

- ❑ Introduction, How web works
- ❑ HTML, CSS and JavaScript: Role on web, Basic syntax
- ❑ Html Templates, Design libraries and JavaScript Frameworks/libraries
- ❑ ASP.NET Core vs. ASP.NET MVC vs. ASP.NET Web Forms vs Classic ASP
- ❑ ASP.NET Core
 - ❑ MVC (**Mandatory**)
 - ❑ ASP.NET Core features and advantages
 - ❑ Routes, Controllers, Actions and model binding
 - ❑ Introducing Razor View, Razor Syntax
 - ❑ Partial Views
 - ❑ Layout Pages
 - ❑ Html and tag helpers
 - ❑ Razor Pages (**Optional**)
 - ❑ Models and Routes
 - ❑ Filters
 - ❑ Blazor SPA (**Optional**)
 - ❑ Routing
 - ❑ Components
 - ❑ Forms
 - ❑ State Management
 - ❑ Exception Handling
 - ❑ Auth
 - ❑ JS Interop
 - ❑ Hosting Models
- ❑ **Project Work:** At least 2 mini projects at the end of Module C