

Course Outline: C# Programming Language

Module 1: Introduction to C# Programming

- Overview of C#
- Setting up the development environment
- Understanding the .NET Framework
- Writing your first C# program

Module 2: Basics of C#

- Variables and data types
- Operators and expressions
- Control flow (if-else, switch)
- Loops (for, while, do-while)

Module 3: Object-Oriented Programming in C#

- Classes and objects
- Inheritance and polymorphism
- Encapsulation and abstraction
- Interfaces and abstract classes

Module 4: Advanced Features of C#

- Delegates and events
- Lambda expressions
- LINQ (Language Integrated Query)
- Exception handling

Module 5: Data Handling in C#

- Working with files and streams
- Collections and generics
- Introduction to databases and ADO.NET
- Using Entity Framework

Module 6: Building Applications

- Introduction to Windows Forms and WPF
- Basics of ASP.NET Core
- Creating a simple console and web application

Module 7: Best Practices and Advanced Topics

- Writing clean and maintainable code
- Debugging and testing
- Asynchronous programming with async and await
- Exploring the latest C# features (based on the version)

Module 8: Capstone Project

- Building a real-world application
- Applying all concepts learned in the course