

**Rapid C# Introduction for Experienced OO Developers**

**Course Number:** CSHP-214  
**Duration:** 2 days

**Overview**

This Rapid C# Introduction for Experienced OO Developers training course introduces object-oriented concepts using C# and concisely covers the essentials of programming using Microsoft’s C# programming language. Attendees learn the .NET architecture and the basics of running C# programs in a .NET environment, as well as C# language essentials. The course also discusses how C# relates to the .NET Framework and covers delegates and events. Coverage of new features are also included.

**Note:** The recommended IDE for this C# training course is Visual Studio 2022, but the course can also be taught using Visual Studio for Mac, or VS Code upon request.

**Prerequisites**

All students should be an experienced application developer or architect. Some background in object-oriented programming would be helpful.

**Materials**

All C# training students receive comprehensive courseware.

**Software Needed on Each Student PC**

* Windows 10 or later with at least 8GB RAM
* Visual Studio 2022 or later
* Related lab files that Accelebrate will provide

**Objectives**

* Acquire a working knowledge of C# programming
* Learn about important interactions between C# and the .NET Framework
* Learn how to implement simple GUI programs using Windows Forms
* Gain a working knowledge of important newer features in C#

**Outline**

* Introduction to .NET
  + What is .NET?
  + .NET Framework, .NET Core, and .NET 6.0
  + Application Models
  + Managed Code
  + Visual Studio 2022
  + C# Console and GUI Programs
* C# Overview for the Sophisticated Programmer
  + First C# Console Application
  + Namespaces
  + Data Types
  + Conversions
  + Control Structures
  + Subroutines and Functions
  + Parameter Passing
  + Strings
  + Arrays
  + Implicitly Typed Variables
  + Console I/O
  + Formatting
  + Exception Handling
* Object-Oriented Programming in C#
  + Classes
  + Access Control
  + Methods and Properties
  + Asymmetric Accessor Accessibility
  + Static Data and Methods
  + Constant and Readonly Fields
  + Auto-Implemented Properties
  + Inheritance
  + Overriding Methods
  + Abstract Classes
  + Sealed Classes
  + Access Control and Assemblies
* C# and .NET
  + Components
  + Interfaces
  + System.Object
  + .NET and COM
  + Collections
  + IEnumerable and IEnumerator
  + Copy Semantics in C#
  + Generic Types
  + Type-Safe Collections
  + Object Initializers
  + Collection Initializers
  + Anonymous Types
  + Attributes
* Delegates and Events
  + Delegates
  + Anonymous Methods
  + Lambda Expressions
  + Random Number Generation
  + Events
* Introduction to Windows Forms
  + Creating Windows Applications
  + Partial Classes
  + Buttons, Labels and Textboxes
  + Handling Events
  + Listbox Controls
* Newer Features in C#
  + Asynchronous Programming
  + Nullable Reference Types
  + Record Types
  + Global and Implicit Using Directives
  + Top-Level Statements
* Conclusion