



## Aspect Training

Telephone: [0208 942 5724](tel:02089425724)

Email: [info@aspecttraining.co.uk](mailto:info@aspecttraining.co.uk)

YOUR COURSE, YOUR WAY - MORE EFFECTIVE IT TRAINING

# C# Introduction / Intermediate

**Duration: 5 days**

## Overview:

In this course, you'll learn to use Visual Studio to explore the Visual C# language.

The course starts with a quick overview of the .NET platform, examining assemblies, Microsoft Intermediate Language, Visual Studio profiles, XML comments, IntelliSense, and debugging.

From there, you'll learn all the language features that you must internalize in order to create full-featured Web or Windows applications that make best use of the .NET platform. You'll learn about data types, variables, and operators, along with all the important flow control structures.

You'll work through several examples demonstrating the power of the .NET Framework, and dig into creating and consuming your own classes and objects.

The course moves on to working with data structures, such as arrays and collection classes, before finishing up with discussions of generics, handling exceptions and working with delegates and events.

The course concludes by introducing the new LINQ-oriented features including anonymous types, lambda expressions, and more. By the end of this course, you will understand the important basic concepts that will allow you to start creating the applications you need.

## Prerequisites:

Developers needing a introduction to the C#.NET language. This course teaches the C# language which is the same whether you are creating Windows, ASP, or mobile .NET applications.

---

## Topics:

### 1 - Getting Started

Learn the advantages and architecture of the .NET Framework

Setup a development profile in Visual Studio .NET

View the code that Visual Studio generates and understand what it does

### 2 - Data Types and Variables

Understand how to create variables and assign values

Explore operators and see how they can be used to change values and compare expressions

### 3 - Using the .NET Framework

Using .NET Framework classes

Explore basic file IO operation

Learn how to work with strings

#### **4 - Branching and Flow Control**

Making choices using conditional statements

Manage flow control using branching statements

Break out of loops when necessary

#### **5 - Classes and Objects**

Investigate .NET Framework classes to see how you can consume classes in your code

Learn about properties, methods, and fields

Create instances of classes using class constructors

Investigate class details, including reference vs. value types, and more

#### **6 - Properties and Methods**

Explore how to use properties in your classes

Learn to control how property values are set and retrieved

Understand how to pass arguments to methods

Learn how to return both simple and complex data types from methods

#### **7 - Object-Oriented Techniques**

Understand how derived classes inherit from base classes

Explore how to add and modify members in derived classes

Understand how to create and use interfaces

Explore techniques for organizing your classes

#### **8 - Working with Arrays**

Create and initialize arrays

Work with array methods and properties

Investigate arrays in the .NET Framework

Learn techniques for sorting arrays

#### **9 - Delegates and Events**

Learn different ways to work with delegates

Introduce anonymous delegates

Learn how delegates and events are related

Investigate events and event handlers

#### **10 - Generics**

Understand the advantages and benefits of generics

Explore the use of generics to sort and search in arrays

See how to use generic interfaces and constraints

Explore the generic List class

## **11 - Handling Exceptions**

Learn to use try/catch blocks to handle runtime errors

Throw exceptions back to procedure callers

Use the finally block to run code unconditionally

Create and handle userdefined exceptions

## **12 - Collection Classes**

Investigate the collection interfaces in the System.Collections.Generic namespace

Create dynamically sized arrays using the List class

Investigate the generic SortedDictionary, SortedList, Stack, and Queue class

## **13 - LINQ**

Motivate the need for LINQ

Learn about the various LINQ providers

Investigate simple LINQ to Objects, LINQ to SQL, and LINQ to XML samples

## **14 - Working with relational databases**

Accessing databases with the Entity Framework (EF)

Integrating C# extended features with LINQ