



Programming in C# Overview

This 5 day Programming in C# training course aims to provide delegates with the ability to use the C# language to build Windows applications. Throughout the course candidates will review the basics of C# programming structure, language syntax, and implementation particulars.

Throughout the course, delegates will complete labs for each module of the course, enabling firsthand experience to be obtained. This Programming in C# training course is fully accredited by [Microsoft](#).

Programming in C# Outline

This course will cover the following content:

Module 1: Review of C# Syntax

- Overview of Writing Applications using C#
- Datatypes, Operators, and Expressions
- C# Programming Language Constructs
- Lab: Developing the Class Enrolment Application

Module 2: Creating Methods, Handling Exceptions, and Monitoring Applications

- Creating and Invoking Methods
- Creating Overloaded Methods and Using Optional and Output Parameters
- Handling Exceptions
- Monitoring Applications
- Lab : Extending the Class Enrolment Application Functionality

Module 3: Developing the Code for a Graphical Application

- Implementing Structs and Enums
- Organizing Data into Collections
- Handling Events

- Lab : Writing the Code for the Grades Prototype Application

Module 4: Creating Classes and Implementing Type-safe Collections

- Creating Classes
- Defining and Implementing Interfaces
- Implementing Type-safe Collections
- Lab: Adding Data Validation and Type-safety to the Grades Application
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Module 5: Creating a Class Hierarchy by Using Inheritance

- Creating Class Hierarchies
- Extending .NET Framework Classes
- Creating Generic Types
- Lab: Refactoring Common Functionality into the User Class

Module 6: Reading and Writing Local Data

- Reading and Writing Files
- Serializing and Deserializing Data
- Performing I/O Using Streams
- Lab: Generating the Grades Report

Module 7: Accessing a Database

- Querying Data by Using LINQ
- Updating Data by Using LINQ
- Lab: Retrieving and Modifying Grade Data

Module 8: Accessing Remote Data

- Accessing Data Across the Web
- Accessing Data in the Cloud
- Lab: Retrieving and Modifying Grade Data in the Cloud

Module 9: Designing the User Interface for a Graphical Application

- Using XAML to Design a User Interface
- Binding Controls to Data

- Styling a User Interface
- Lab: Customizing Student Photographs and Styling the Application

Module 10: Improving Application Performance and Responsiveness

- Implementing Multitasking by using Tasks and Lambda Expressions
- Performing Operations Asynchronously
- Synchronizing Concurrent Access to Data
- Lab: Improving the Responsiveness and Performance of the Application

Module 11: Integrating with Unmanaged Code

- Creating and Using Dynamic Objects
- Managing the Lifetime of Objects and Controlling Unmanaged Resources
- Lab: Upgrading the Grades Report

Module 12: Creating Reusable Types and Assemblies

- Examining Object Metadata
- Creating and Using Custom Attributes
- Generating Managed Code
- Versioning, Signing and Deploying Assemblies
- Lab: Specifying the Data to Include in the Grades Report

Module 13: Encrypting and Decrypting Data

- Implementing Symmetric Encryption
- Implementing Asymmetric Encryption
- Lab: Encrypting and Decrypting Grades Reports