

C# / .Net Core Developer SkillJourneys

Programming in C# / Creating Apps in C# and .Net Core (Latest Edition) (20483) (TTCN20483)

Fast Track to C# for OO Developers | Core Skills and Best Practices Required to Create Windows Applications using Visual C#

Course Snapshot

- **Course: Programming in C# | Creating Apps in C# and .Net Core (Latest Edition) (20483) (TTCN20483)**
- **Duration:** 5 days
- **Audience:** This introductory-level course is intended for experienced developers who already have programming experience in C, C++, JavaScript, Objective-C, Microsoft Visual Basic, or Java and understand the concepts of object-oriented programming.
- **Format / Hands-on:** This course combines engaging instructor-led presentations and practical demonstrations with hands-on programming exercises, challenge labs, use case exploration and engaging group activities. Student machines are required.
- **Flexible Delivery Options:** This course can be delivered for your team or organization online-live (virtual), onsite in-person, self-paced or across our immersive blended learning experience platform (LXP).
- **Public Schedule:** This course is currently available on our Public Open Enrollment Schedule.
- **Customizable:** We're flexible! This course agenda, topics, labs, hours and delivery modalities can be adjusted to target your specific training skills objectives, tools and learning goals. Please ask for details.

Overview

Programming in C# / Creating Apps in C# and .Net Core is an intensive, hands-on training course, essential for experienced developers seeking instruction in creating applications in C# & .Net Core (latest edition).

During their five days in the classroom students review the basics of Visual C# program structure, language syntax, and implementation details, and then consolidate their knowledge throughout the week as they build an application that incorporates several features of the latest .NET Core.

This independent course aligns with the topics and skills in Microsoft Official Curriculum (MOC) course 20483.

Learning Objectives

Our engaging instructors and mentors are highly experienced practitioners who bring years of current "on-the-job" experience into every classroom. Working in a hands-on learning environment, guided by our expert team, attendees will learn to:

- Describe the core syntax and features of C#.
- Create methods, handle exceptions, and describe the monitoring requirements of large-scale applications.
- Implement the basic structure and essential elements of a typical application.
- Create classes, define and implement interfaces, and create and use generic collections.
- Use inheritance to create a class hierarchy.
- Read and write data by using file input/output and streams and serialize and deserialize data in different formats.
- Create and use an Entity Framework for accessing a database and use LINQ to query data.
- Access and query remote data.
- Build a graphical user interface by using MAUI/Blazor/ASP.Net.
- Improve the throughput and response time of applications by using tasks and asynchronous operations.
- Examine the metadata of types by using reflection, create and use custom attributes.

Need different skills or topics? If your team requires different topics or tools, additional skills or custom approach, this course may be further adjusted to accommodate. We offer additional C#, .Net Core and Visual Studio application development, web development, SOLID development, test driven development, .Net Secure coding, services and other related topics that may be blended with this course for a track that best suits your needs. Please inquire for details.

Audience & Pre-Requisites

Developers attending this course should have incoming experience using C# to complete basic programming tasks. More specifically, students should have hands-on experience using C# that demonstrates their understanding of the following:

- How to name, declare, initialize and assign values to variables within an application.
- How to use: arithmetic operators to perform arithmetic calculations involving one or more variables; relational operators to test the relationship between two variables or expressions; logical operators to combine expressions that contain relational operators.
- How to create the code syntax for simple programming statements using C# language keywords and recognize syntax errors using the Visual Studio IDE.
- How to create a simple branching structure using an IF statement.
- How to create a simple looping structure using a For statement to iterate through a data array.
- How to use the Visual Studio IDE to locate simple logic errors.
- How to create a Function that accepts arguments (parameters and returns a value of a specified type).
- How to recognize the classes and methods used in a program.

Next Steps / Related Courses | Microsoft Developer Training Suite

Below is a subset of our follow on courses in .Net development, web development, SOLID design, .Net services, .Net secure coding and others. Please visit our site or contact us for the full course listing and next-step recommendations.

- TTCN10975 [Introduction to Programming in C# \(For C# and .Net Core / Latest Edition\) \(10975\)](#)
- TTCN20483 [Programming in C# | Creating Apps in C# and .Net Core / Latest Edition \(20483\)](#)
- TTCN2155 [Intermediate C# | Patterns, Generics, Threading, Database, Entity Framework, UI & More](#)
- TTCN20486 [Developing ASP.Net Core MVC Web Applications / Latest Edition \(20486\)](#)
- TT8320-N [.Net Secure Coding Camp | Attacking and Securing .Net Web Apps \(for .Net Core / Latest Edition\)](#)

Enhanced Learning Services: Please also ask about our robust Learning Experience Platform (LXP), Skills Assessment & Skills Prep Services, Skills Immersion Programs & Camps, Coaching and Mentoring Services and Extended Learning Support programs.

Course Topics / Agenda

Please note that this list of topics is based on our standard course offering, evolved from typical industry uses and trends. We'll work with you to tune this course and level of coverage to target the skills you need most. Topics, agenda and labs are subject to change, and may adjust during live delivery based on audience skill level, interests and participation.

Module 1: Review of C# Syntax & New Features

The .Net (Core) provides a comprehensive development platform that you can use to build, deploy, and manage applications and services. By using the .Net, you can create visually compelling applications, enable seamless communication across technology boundaries, and provide support for a wide range of business processes. In this module, you will learn about some of the core C# constructs that enable you to start developing .Net applications. After completing this module, students will be able to:

- Describe the architecture of .NET applications and the features that Visual Studio and C# provide.
- Use basic C# data types, operators, and expressions.
- Use standard C# constructs.

Lessons

- Visual Studio Projects
- .Net Core vs .Net Framework
- Top-level statements (new)
- Creating a simple console application
- Global Usings (new)

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

Applications often consist of logical units of functionality that perform specific functions, such as providing access to data or triggering some logical processing. C# is an object-orientated language and uses the concept of methods to encapsulate logical units of functionality. A method can be as simple or as complex as you like. In this module, you will learn how to create and use methods and how to handle exceptions. You will also learn how to use logging

and tracing to record the details of any exceptions that occur. After completing this module, students will be able to:

- Create and invoke methods.
- Create overloaded methods and use optional parameters.
- Handle exceptions.
- Monitor applications by using logging, tracing, and profiling

Lessons

- Creating and Invoking Methods
- Creating Overloaded Methods and Using Optional and Output Parameters
- Handling Exceptions
- Using log & trace

Module 3: Basic types and constructs of C#

To create effective applications, you must first learn some basic C# constructs. You need to know how to create simple structures to represent the data items you are working with. You need to know how to organize these structures into collections, so that you can add items, retrieve items, and iterate over your items. Finally, you need to know how to subscribe to events so that you can respond to the actions of your users. In this module, you will learn how to create and use structs and enums, organize data into collections, and create and subscribe to events. After completing this module, students will be able to:

- Create and use structs and enums.
- Use collection classes to organize data.
- Create and subscribe to events.

Lessons

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

Module 4: Creating Classes and Implementing Type-Safe Collections

In this module, you will learn how to use interfaces and classes to define and create your own custom, reusable types. You will also learn how to create and use enumerable, type-safe collections of any type. After completing this module, you will be able to:

- Create and instantiate classes.
- Create and instantiate interfaces.
- Use generics to create type-safe collections.

Lessons

- Creating Classes

- Defining and Implementing Interfaces
- Implementing Type-Safe Collections

Module 5: Creating a Class Hierarchy by Using Inheritance

In this module, you will learn how to use inheritance to create class hierarchies and to extend .Net types. After completing this module, you will be able to:

- Create base classes and derived classes by using inheritance.

Lessons

- Creating Class Hierarchies

Module 6: Reading and Writing Local Data

In this module, you will learn how to read and write data by using transactional file system I/O operations, how to serialize and deserialize data to the file system, and how to read and write data to the file system by using streams.

After completing this module, you will be able to:

- Read and write data to and from the file system by using file I/O.
- Convert data into a format that can be written to or read from a file or other data source.
- Use streams to send and receive data to or from a file or data source.

Lessons

- Reading and Writing Files
- Serializing and Deserializing Data
- Performing I/O by Using Streams

Module 7: Accessing a Database

In this module, you will learn how to use Entity Framework and how to query many types of data by using Language-Integrated Query (LINQ). After completing this module, you will be able to:

- Create, use, and customize an EF Context.
- Query data by using LINQ.

Lessons

- Creating and Using Entity Data Models
- Querying Data by Using LINQ

Module 8: Accessing Remote Data

In this module, you will learn how to use the request and response classes in the System.Net namespace to indirectly manipulate remote data sources. After completing this module, you will be able to:

- Send data to and receive data from web services and other remote data sources.

Lessons

- Accessing Data Across the Web

Module 9: Designing the User Interface for a Graphical Application

In this module, you will learn how to use Maui, Blazor, and or HTML based Web applications. After completing this module, you will be able to:

- Create a Maui application
- Create a Blazor application
- Create an ASP.Net application

Module 10: Improving Application Performance and Responsiveness

In this module, you will learn how to improve the performance of your applications by distributing your operations across multiple threads. After completing this module, you will be able to:

- Use Tasks to implement multitasking.
- Perform long-running operations without blocking threads.
- Control how multiple threads can access resources concurrently.

- Understand the use of async/await

Lessons

- Using and coordinating Threads
- Using Tasks
- Using async/await

Module 11: Creating Reusable Types and Assemblies

In this module, you will learn how to consume existing assemblies by using reflection and how to add additional metadata to types and type members by using attributes.

After completing this module, you will be able to:

- Use reflection to inspect and execute code.
- Create and consume custom attributes.

Lessons

- Examining Object Metadata
- Creating and Using Custom Attributes

Setup Made Simple! Learning Experience Platform (LXP)

All applicable course software, digital courseware files or course notes, labs, data sets and solutions, live coaching support channels, CodeCoach.AI anytime tutor access, and rich extended learning and post training resources are provided for you in our “easy access, single source, no install required” online **Learning Experience Platform (LXP)**, remote lab and content environment. Access periods vary by course. We’ll collaborate with you to ensure your team is set up and ready to go well in advance of the class. Please inquire about set up details and options for your specific course of interest.

For More Information

For more information about our training services (instructor-led, self-paced or blended), collaborative coaching services, robust Learning Experience Platform (LXP), Career Experiences, public course schedule, partner programs, courseware licensing options or to see our complete list of course offerings, solutions and special offers, please visit us at www.triveratech.com, email Info@triveratech.com or call us toll free at **844-475-4559**. Our pricing and services are always satisfaction guaranteed.

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