Intermediate C# and .Net Core | Patterns, Generics, Threading, Database, Entity Framework, UI & More (TTCN2155)

Category: Software Development & Programming | **Vendor:** Trivera Tech

Duration: 40.00 hours (5 days) **32.5 CPD Hours** **Rating:** ⭐ 4.6 (5,878 reviews)

Course Information

Delivery Format: Instructor Led - Online

Course Overview

Developing Applications in C# and .Net Core (Intermediate C# / .Net Core) is a lab-intensive, hands-on course designed to provide you with the skills required to take your C# programming skills to the next level. Throughout the course you ll explore C# Design Guidelines, Robust Classes, Generics, Lambda Expressions & LINQ, Reflection & Metadata, Resources & Globalization, Basics of Threading and the Basics of Database connectivity.

About This Course

Developing Applications in C# and .Net Core (Intermediate C# / .Net Core) is a lab-intensive, hands-on course designed to provide you with the skills required to take your C# programming skills to the next level. Throughout the course you ll explore C# Design Guidelines, Robust Classes, Generics, Lambda Expressions & LINQ, Reflection & Metadata, Resources & Globalization, Basics of Threading and the Basics of Database connectivity.

Who Should Attend

This is an intermediate-level .Net programming course, designed for experienced C# developers

Learning Outcomes

Upon successful completion of this course, participants will be able to:

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:

Design and implement classes that adhere to SOLID design principles

Understand common design patterns

Implement robust classes with properties, methods, delegates & events

Understand, use, and implement generics

Explore generics in the .Net Framework

Understand and use Language integrated Query (LiNQ)

Understand and use Lambda expressions

Build dynamic applications using reflection

Use internationalization to build world friendly applications

Build multithreaded applications

Understand the basics of database access

What’s new in .Net Core and C#

Detailed Course Outline

Quick C# Basics Refresher

- Design Guidelines
- Conventions
- Class Design guidelines
- Exception Design guidelines
- Common Design Patterns

Robust Classes

- Properties
- Functions
- Delegates
- Events
- .Net Core and C# 9+ features

Generics

- Generic Classes
- Generic Functions
- Survey of Generics in the .Net Library

Lambda Expressions & LINQ

- Using lambdas to generate a delegate
- Introduction to Language Integrated Query (LINQ)

Reflection & Metadata

- Reflections basics
- Attributes

Resources & Globalization

- Basics of Threading
- Creating Threads
- Coordinating threads
- Overview of the task parallel library

Basics of Entity Framework

- DbContext
- Code first vs Db first
- Entities
- Mapping

, 1. Overview of New Features

¢ Apply modern C# enhancements to streamline code development and maintainability.

¢ Type specifiers

¢ Raw Literals

¢ Top-level statements

¢ Records

¢ Global Usings

¢ Tuples

¢ Deconstruction

2. Design Guidelines

¢ Develop code that adheres to industry-standard design guidelines for clarity, sustainability, and effectiveness.

¢ Conventions

¢ Class Design guidelines

¢ Exception Design guidelines

¢ Common Design Patterns

3. Robust Classes

¢ Construct robust classes with advanced property and function implementations for more dynamic and responsive code.

¢ Properties

¢ Functions

¢ Delegates

¢ Events

4. Unit Testing with XUnit

¢ Implement test-driven development with XUnit to ensure the creation of reliable, bug-resistant applications.

¢ Utilizing Test Driven Development (TDD)

¢ Survey of Unit test frameworks

¢ Using XUnit

¢ Mocking with Moq

5. Exceptions

¢ Master sophisticated exception handling techniques for more robust error management in applications.

¢ Syntax

¢ Exceptions vs Return code

¢ Testing for exceptions

6. Generics

¢ Utilize generics to create flexible, reusable, and type-safe code structures, reducing redundancy.

¢ Generic Classes

¢ Generic Functions

¢ Understanding invariance

¢ Survey of Generics in the .Net Library

7. Delegates

¢ Leverage delegates to design more versatile and modular code with methods as first-class objects.

¢ Methods as objects

¢ Generics and Delegates

¢ Delegates in the library

8. Events

¢ Efficiently manage and respond to application events through proper event definition and handling.

¢ Defining

¢ Register/Deregister

9. Lambda Expressions

¢ Streamline event handling and delegate instantiation using concise lambda expressions.

¢ Using lambdas to generate a delegate

10. Inheritance

¢ Implement inheritance and polymorphism to create extensible and maintainable object-oriented designs.

¢ Syntax

¢ Override/Virtual

¢ Abstract

¢ Polymorphism

11. SOLID Principles & Design Patterns

¢ Apply SOLID principles and design patterns to diagnose and refactor code smells for improved software architecture.

¢ Design Smells

¢ Single Responsibility

¢ Open/Close

¢ Liskov's Substitution Principle

¢ Using SOLID to correct design smells

12. Interfaces

¢ Design and utilize interfaces effectively to decouple code and enhance modularity and testability.

¢ Interface motivations and SOLID

¢ Interface Segregation

¢ Dependency Inversion

¢ Default interface methods

13. LInQ

¢ Manipulate collections efficiently using LINQ queries and extension methods for more expressive data operations.

¢ Extension Methods

¢ Linq API

¢ Linq Query

14. Attributes, Reflection & Metadata

¢ Employ reflection and attributes to manipulate metadata and enhance the functionality of code at runtime.

¢ Reflections basics

¢ Attributes

15. Resources & Globalization

¢ Manage application resources and adapt to different cultures and languages for global software compatibility.

¢ Resource Bundles

¢ Specifying Language/Region

16. Threads, Tasks, Async/Await

¢ Develop efficient, responsive, and scalable applications using advanced concurrency and asynchronous programming techniques.

¢ Creating Threads

¢ Coordinating threads

¢ Tasks

¢ Async/Await

17. Basics of Entity Framework

¢ Leverage Entity Framework for streamlined data access and manipulation, utilizing code-first or database-first approaches effectively.

¢ DbContext

¢ Code first vs Db first

¢ Entities

¢ Mapping

18. Survey of GUI Applications

¢ Explore and understand the latest trends in GUI application development to create intuitive and modern user experiences.

¢ MAUI

¢ Blazor

¢ Asp.Net

Additional Course Details

Nexus Humans Intermediate C# and .Net Core | Patterns, Generics, Threading, Database, Entity Framework, UI & More (TTCN2155) training program is a workshop that presents an invigorating mix of sessions, lessons, and masterclasses meticulously crafted to propel your learning expedition forward.

This immersive bootcamp-style experience boasts interactive lectures, hands-on labs, and collaborative hackathons, all strategically designed to fortify fundamental concepts.

Guided by seasoned coaches, each session offers priceless insights and practical skills crucial for honing your expertise. Whether you're stepping into the realm of professional skills or a seasoned professional, this comprehensive course ensures you're equipped with the knowledge and prowess necessary for success.

While we feel this is the best course for the Intermediate C# and .Net Core | Patterns, Generics, Threading, Database, Entity Framework, UI & More (TTCN2155) course and one of our Top 10 we encourage you to read the course outline to make sure it is the right content for you.

Additionally, private sessions, closed classes or dedicated events are available both live online and at our training centres in Dublin and London, as well as at your offices anywhere in the UK, Ireland or across EMEA.

Frequently Asked Questions

Q: What delivery options are available for Intermediate C# and .Net Core | Patterns, Generics, Threading, Database, Entity Framework, UI & More (TTCN2155)?

We offer multiple delivery formats:

- Live Instructor-Led Classroom Online (Virtual/Live Online)
- Traditional Instructor-Led Classroom Training (ILT)
- On-site delivery at your offices anywhere in United Kingdom
- Private dedicated courses customized for your team

Q: How many CPD hours does this course provide?

The 5-day Intermediate C# and .Net Core | Patterns, Generics, Threading, Database, Entity Framework, UI & More (TTCN2155) course provides up to 32.5 CPD hours of structured learning. CPD certificates can be provided upon request.

Q: What is the duration of the Intermediate C# and .Net Core | Patterns, Generics, Threading, Database, Entity Framework, UI & More (TTCN2155) training?

The training takes place over 5 day(s), with each day lasting approximately 40.00 hours including breaks for lunch and refreshments.

Q: Do you provide corporate training for Intermediate C# and .Net Core | Patterns, Generics, Threading, Database, Entity Framework, UI & More (TTCN2155)?

Yes, we provide corporate training, dedicated training, and closed classes for Intermediate C# and .Net Core | Patterns, Generics, Threading, Database, Entity Framework, UI & More (TTCN2155). Training can take place anywhere in United Kingdom including London, Manchester, Birmingham, Edinburgh, or live online allowing teams from across United Kingdom or internationally to attend.

Q: What related terms do people search for?

Popular related searches include: C# / .Net

Q: Why choose Nexus Human for Intermediate C# and .Net Core | Patterns, Generics, Threading, Database, Entity Framework, UI & More (TTCN2155)?

Nexus Human is recognized as one of the leading training providers. Our trainers have won multiple awards including:

- Small Firms Best Trainer Award
- National Training Partner of the Year (Ireland) - Multiple Years
- Global Top 30 Instructor Awards (2012, 2019, 2021)
- Tech Excellence Award Nominations
- Learning Performance Institute (LPI) External Training Provider Sponsor 2024

Q: Are there any discount codes available?

Yes! Use discount code **PENPAL5** when booking your Intermediate C# and .Net Core | Patterns, Generics, Threading, Database, Entity Framework, UI & More (TTCN2155) training. Please note that only one discount code can be used per booking and cannot be combined with other special offers.

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