.NET Development and Visual Studio

CS314: Advanced C# Programming with Visual Studio

$3,195.00

- 5 Days
- Taught by Microsoft MVP Dan Wahlin
- Exclusive Class - Only at Interface!
- Advanced C# Programming Course

Upcoming Dates

Course Description

This Advanced C# Programming Course with Dan Wahlin can only be found at Interface. The course provides students with the knowledge and skills needed to develop applications using .NET Framework technologies with C# and Visual Studio. Students start with an accelerated language review, followed by core features of the Foundation Class Libraries (FCL), CLR memory management, events and delegates, async tasks, and dependency injection techniques. The class then covers development topics such as working with different System.IO classes, parsing XML data, and creating Windows Services. Finally, the course covers serializing data, exchanging data using WCF services, security classes, and transaction management.

Course Outline

1. Accelerated C# Concepts

- Object Oriented Programming
- Abstraction
- Polymorphism
- Inheritance
- Encapsulation
- Type Conversions
- Operator Overloading
- Using Attributes

2. Best Practices

- Exception Management
- String Manipulation
- Thread Synchronization
- Generics and Constraints

3. CLR Memory Management

- The Common Type System
- Understanding CLR Generations
- The role of IDisposable

- Using the CLR Profiler

4. Foundation Class Library Features

- System.IO Classes
- System.Net Classes
- System.Threading.Tasks
- System.Reflection Classes

5. Conditional Compilation

- Defining Debug Symbols
- Conditional Compilation using the Conditional Attribute

6. Events and Delegates

- What are Events, Delegates and Event Handlers?
- Working with Delegates and Events
- Creating Custom EventArgs Classes
- Using Lambda Expressions
- Using Func<T,TResult>
- The async and wait keywords

7. Using Dependency Injection

- What is Dependency Injection (DI)?
- What is an IoC container?
- The Role of Interfaces
- Dependency Injection Techniques
- Using an Ioc Container for DI

8. Monitoring, Debugging and Tracing

- Using the Debugger Class
- Tracing Operations
- Performance Counters

9. Working with XML Data

- Using System.Xml Classes
- Using XML APIs
- Monitoring XML files using Windows Services and the FileSystemWatcher

10. Serializing Data

- Binary serialization
- XML Serialization

11. .NET Security and Cryptography

- Symmetric and Asymmetric Encryption Techniques
- WindowsPrincipal and GenericPrincipal

12. Exposing Data with WCF

- Web Services Architecture
- Creating and Consuming a WCF Service
- Modifying WCF Bindings
- Debugging Services

13. Working with Transactions

- Getting Started with Transactions
- ADO.NET Transactions
- Using TransactionScope

Audience

This course is valuable for developers who are interested in enhancing their existing C# programming skills.

Prerequisites

It is highly recommended that students take the C# Programming course before taking this course or have at least 6 months of hands-on programming experience with C# and feel comfortable working with C# syntax.

Before taking this course, students should successfully complete the following course or have equivalent experience:

CS214: C# Programming with Visual Studio

What You Will Learn

- Learn best practices
- Review Object-oriented principles
- Learn how to build classes with custom events and delegates
- Understand how Func<T, TResult> and Action<T> can be used
- Understand the role of dependency injection
- Learn more about how the CLR manages memory
- Write asynchronous code with async and await
- Learn how to selectively compile code
- Drill into .NET XML parsing APIs
- Build distributed applications using Windows Communication Foundation (WCF)
- Apply transaction management technique