

#10266A: PROGRAMMING IN C# WITH VISUAL STUDIO

Available Dates: **Call for Dates**

Class Length: **5 day**

Cost: **\$2,795**

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Class Outline:

Description:

The course focuses on C# program structure, language syntax, and implementation details with .NET Framework 4.0. This course describes the new enhancements in the C# 4.0 language by using Visual Studio 2010.

In this course, lower-intermediate level programmers gain the knowledge and skills they need to develop C# applications for the Microsoft .NET Framework 4.0. The course highlights the structure of C# 4.0 programs, language syntax, and implementation details. This course is not mapped to any exam.

Course Outline:

Module 1: Introducing C# and the .NET Framework

This module explains the .NET Framework, and using C# and Visual Studio 2010 for building .NET Framework applications.

Lessons

- Introduction to the .NET Framework
- Creating Projects Within Visual Studio 2010
- Writing a C# Application
- Building a Graphical Application
- Documenting an Application
- Running and Debugging Applications by Using Visual Studio 2010

Module 2: Using C# Programming Constructs

This module explains the syntax of basic C# programming constructs.

Lessons

- Declaring Variables and Assigning Values
- Using Expressions and Operators
- Creating and Using Arrays
- Using Decision Statements
- Using Iteration Statements

Module 3: Declaring and Calling Methods

This module explains how to create and call methods.

Lessons

- Defining and Invoking Methods
- Specifying Optional Parameters and Output Parameters

Module 4: Handling Exceptions

This module explains how to catch exceptions and handle them. Students will also learn how to throw exceptions.

Lessons

- Handling Exceptions
- Raising Exceptions

Module 5: Reading and Writing Files

This module explains how to perform basic file I/O operations in a C# application.

Lessons

- Accessing the File System
- Reading and Writing Files by Using Streams

Module 6: Creating New Types

This module explains how to create and use new types (enumerations, classes, and structures)

Lessons

- Creating and Using Enumerations
- Creating and Using Classes
- Creating and Using Structs
- Comparing References to Values

Module 7: Encapsulating Data and Methods

This module explains how to control the visibility and lifetime of members in a type.

Lessons

- Controlling Visibility of Type Members
- Sharing Methods and Data

Module 8: Inheriting From Classes and Implementing Interfaces

This module explains how to use inheritance to create new reference types

Lessons

- Using Inheritance to Define New Reference Types
- Defining and Implementing Interfaces
- Defining Abstract Classes

Module 9: Managing the Lifetime of Objects and Controlling Resources

This module explains how to manage the lifetime of objects and control the use of resources.

Lessons

- Introduction to Garbage Collection
- Managing Resources

Module 10: Encapsulating Data and Defining Overloaded Operators

This module explains how to create properties and indexers to encapsulate data, and how to define operators for this data.

Lessons

- Creating and Using Properties
- Creating and Using Indexers
- Overloading Operators

Module 11: Decoupling Methods and Handling Events

This module explains how to decouple an operation from the method that implements an operation, and how to use these decoupled methods to handle asynchronous events.

Lessons

- Declaring and Using Delegates
- Using Lambda Expressions
- Handling Events

Module 12: Using Collections and Building Generic Types

This module introduces collections, and describes how to use Generics to implement type-safe collection classes, structures, interfaces, and methods.

Lessons

- Using Collections
- Creating and Using Generic Types
- Defining Generic Interfaces and Understanding Variance
- Using Generic Methods and Delegates

Module 13: Building and Enumerating Custom Collection Classes

This module explains how to implement custom collection classes that support enumeration.

Lessons

- Implementing a Custom Collection Class
- Adding an Enumerator to a Custom Collection Class

Module 14: Using LINQ to Query Data

This module explains how to query in-memory data by using LINQ.

Lessons

- Using the LINQ Extension Methods and Query Operators
- Building Dynamic LINQ Queries and Expressions

Module 15: Integrating Visual C# Code with Dynamic Languages and COM Components

This module explains how to integrate code written by using a dynamic language such as Ruby and Python, and technologies such as COM, into a C# application

Lessons

- Integrating C# Code with Ruby and Python
- Accessing COM Components from C#