

## Programming with .NET: A Comprehensive Hands-On Introduction - 4 Days

### *Course 502 Overview*

- You Will Learn How To**
- Design and program web and Windows applications using Microsoft .NET and Visual Studio
  - Write code using Visual Basic (VB) and C#
  - Leverage Visual Studio for code generation, user interface design, testing and debugging
  - Create ASP.NET web applications and process Web Forms
  - Control website access with Web Forms authentication
  - Build SQL Server databases and access them using ADO.NET
- Course Benefits** Microsoft Visual Studio and the .NET Framework provide a huge suite of tools that allows you to develop modern software applications. This introductory course provides a broad overview of, and hands-on experience with, the basics of C#, Visual Basic, Windows programming, ASP.NET and ADO.NET database access.
- Who Should Attend** Those new to programming or those with mainframe, SQL, HTML or similar experience who want an introduction to programming with .NET. Prior programming experience is helpful but not required. Those with prior experience in languages like VB6 or earlier, Java, C/C++ and Pascal who want in-depth coverage of VB or C# should consider Course 503, "Visual Basic Programming for .NET," or Course 419, "C# Programming."
- Hands-On Training** You develop ASP.NET and Windows applications with VB or C# and the .NET Framework. Exercises include:
- Writing object-oriented applications using Visual Basic or C# language constructs
  - Programming Windows desktop and console applications
  - Planning and designing applications, classes and UIs with Visual Studio
  - Leveraging Visual Studio tools for rapid application development and testing
  - Creating ASP.NET web applications and processing Web Forms
  - Managing web users with ASP.NET Forms authentication
  - Saving data to SQL Server databases using ADO.NET

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## Course 502 Outline

### **.NET Programming Fundamentals**

#### **Building applications with Visual Studio**

- Managing projects with Solution Explorer
- Setting project properties and adding references
- Adding files, folders and code
- Compiling, debugging and testing programs

#### **Coding object-oriented applications**

- Dividing code into classes
- Adding fields, methods properties, events and constructors to classes
- Defining scope and visibility

### **VB and C# Language Syntax**

#### **Working with data types and conversions**

- Strings
- Dates and time
- Integers
- Real numbers
- Booleans
- Performing calculations with mathematical operators
- Converting between data types

#### **Controlling program execution**

- IF statements
- CASE (switch) statements
- For...Next loops
- Do While...loops

#### **Handling errors**

- Throwing exceptions
- Try...Catch...Finally error handling
- Using the debugger

#### **Automating testing with Visual Studio**

- Creating Visual Studio test projects
- Writing unit tests
- Testing classes, properties, method and exceptions
- Stepping through code with the debugger

### **Crafting Windows Applications**

#### **Windows application basics**

- Creating forms and controls
- Navigating with menus
- Automating code with the Toolbox and Properties window

#### **Event-driven programming**

- Handling events from the user interface
- Declaring and raising events

- Displaying dialog forms

### **Designing Object-Oriented Applications**

#### **Separating application responsibilities into classes**

- Single responsibility principle
- Inheriting a base class
- Overriding methods in derived classes

#### **Reusing code from multiple projects**

- Creating a class library in Visual Studio
- Setting references

### **Programming Web Applications with ASP.NET**

#### **Constructing ASP.NET Websites with Visual Studio**

- Writing HTML pages and forms
- Maintaining consistency with Master Pages
- Designing pages with ASP.NET controls
- Styling sites with ASP.NET themes

#### **Processing ASP.NET Web Forms**

- Displaying data and gathering user input
- Initializing Web Forms controls
- Activating Web Forms with events
- Maintaining variables with Sessions

#### **Controlling website access**

- Configuring Web Forms security
- Setting up a user login page
- Automating user account creation

### **Incorporating Relational Databases**

#### **Relational database concepts**

- Employing databases for fast, efficient storage
- Selecting, inserting, updating and deleting query syntax

#### **Creating a SQL Server database**

- Adding tables, fields and indexes
- Defining primary and foreign key relationships

#### **Accessing the database with ADO.NET**

- Connecting to the database and running SQL commands
- Storing user information
- Retrieving existing records

#### **Deploying .NET Applications**

- Installing the .NET Framework

- Publishing applications with ClickOnce
- Moving ASP.NET applications to the web