

Course 462: VB.NET 2.0 Programming with Visual Studio .NET 2005

Course Description

The VB.NET 2.0 Programming with Visual Studio .NET 2005 course provides a solid foundation in the VB.NET language covering topics ranging from object oriented techniques to advanced .NET framework technologies. New language features including generics, the "My" namespace and data sources are also discussed and applied to real-world situations. The course provides a hands-on look at new and exciting Visual Studio .NET 2005 features such as refactoring, debugging and code snippets and provides students with experience building data driven ASP.NET and Windows Forms applications using Visual Studio .NET 2005 and VB.NET 2.0. The course includes numerous hands-on labs that provide practical experience and code that students can take back to work and put to use immediately.

This course is written by Microsoft .NET MVP Dan Wahlin.

You will learn...

- Object-oriented principles
- How to use the new VB.NET My Namespace
- VB.NET Language Fundamentals
- VB.NET Generics and other VB.NET 2.0 features
- Visual Studio .NET 2005 features
- The role of classes, objects, namespaces, and assemblies
- .NET Base Class Libraries
- Components of the .NET framework
- ADO.NET 2.0 and data binding
- Working with Multiple Threads

Prerequisites..

Previous experience with a programming language such as Visual Basic, C++, or Java is highly recommended to get the most out of this course.

See next page for detailed course outline...



Course Outline

➤ Section 1 – Building Applications with the .NET Framework

- What is the .NET Framework?
- The role of the Common Language Runtime (CLR)
 - What is the CLR and what does it do in .NET?
 - .NET object-oriented language choices
 - Multi-language interoperability
 - Memory Management and Garbage Collection
- .NET Compilation Model
 - Microsoft Intermediate Language (MSIL)
 - Just-in-Time compilation
 - Assemblies and Namespaces
- The Base Class Library

➤ Section 2 – VB.NET Fundamentals

- VB.NET Language Features
 - Compiled
 - Object-oriented
 - Threading support
 - Structured exception handling
 - Garbage collection
- New Features in VB.NET 2005
 - Generics
 - Partial Types
 - My namespace
 - XML Comments
- Compiling VB.NET applications
- **Hands-on lab:** Creating your first VB.NET Program

➤ Section 3 – Visual Studio.NET 2005

- .NET Development Tools
- VS.NET 2005 Editions
- VS.NET 2005 Features
 - Refactoring Support
 - Database and Query Designer
 - Integrated Web Publishing
 - Class Designer
 - Code Snippets
 - Debugger Visualizers
 - Edit and Continue
- **Hands-on lab:** Exploring Visual Studio .NET 2005 Features

➤ Section 4 – VB.NET Language Syntax

- VB.NET Basics
 - Writing statements
 - Commenting Code
 - XML Comments
 - Value vs. Reference Types
 - VB.NET Operators
- Defining Variables, Constants, and Arrays in VB.NET
 - What is a variable?
 - Understanding variable scoping
 - Option Explicit and Option Strict



- Declaring variables
- Declaring constants
- Declaring arrays
- Conditionals and Looping
 - If...Else statements
 - IsNot keyword
 - Select Case statements
 - Looping statements
- **Hands-on lab:** Working with Arrays and Loops

➤ Section 5 – Classes and Structs

- What are classes?
- What are objects?
- Class members
- Creating a class from scratch
- Setting class member access visibility
- Adding constructors
- Adding fields to a class
- Adding property set and get statements to a class
- Property indexers
- Adding methods to a class
 - Sub Vs. Function
 - Method parameters (ByVal and ByRef)
 - Allowing for optional parameters
 - Using the ParamArray keyword
 - Shared methods
 - Calling methods
- The Role of Namespaces
- What is a Structure?
- Differences between classes and structures
- Creating a class in VS.NET 2005 with the Class Designer
- **Hands-on lab:** Creating a VB.NET class with members
Creating a VB.NET class using the VS.NET 2005 Class Designer

➤ Section 6 –Object-Oriented Programming

- What is object-oriented programming?
- The role of System.Object in .NET
- Understanding Abstraction, Encapsulation, Polymorphism and Inheritance
- Using abstract classes
- Method overloading and overriding
- Shadowing
- Understanding boxing and unboxing in .NET
- Operator Overloading
- Using .NET Attributes
- Structured Exception handling
 - Error handling in VB.NET
 - Exception objects
 - Using Try...Catch blocks
 - Adding a Finally block
 - Throwing exceptions
- Working with interfaces
 - What is an interface?
 - Uses for interfaces in VB.NET



- Creating interfaces
- **Hands-on lab:** Inheriting from a base class

➤ Section 7 – Generics

- What are Generics?
- Creating objects using Generics
- Defining a custom Generic type
- Generic Constraints
- Using the Nullable Structure
- System.Collections.Generic Classes
- **Hands-on lab:** Using Generics in Classes

➤ Section 8 – Working with the VB.NET My Namespace

- What is the VB.NET My Namespace?
- My Namespace Features:
 - Checking if a client is connected to the network
 - Playing sounds
 - Uploading files
 - Accessing user names and domains
 - Working with the file system
- **Hands-on lab:** Parsing flat-files using the VB.NET My Namespace

➤ Section 9 – Delegates and Events

- The role of Events and Delegates in .NET
- Understanding events in VB.NET applications
- Understanding and Creating Events
- Understanding and Creating Delegates
- Hooking up Event Handlers with AddHandler
- **Hands-on lab:** Adding Delegates and Events to a class

➤ Section 10 – Using the Base Class Library

- Overview of functionality in the framework class library
- Working with System.IO classes
 - Stream readers and writers
 - Reading files
 - Writing to files
 - Working with Memory Streams
- Working with Dates and Times
- Accessing remote data and sending email with System.Net classes
- Building strings with the StringBuilder class
- Pattern searching with Regular Expressions
- Working with Threads
- **Hands-on lab:** Reading and writing to the file system

➤ Section 11 – Data Access with ADO.NET

- Introduction to ADO.NET 2.0
- What's new in ADO.NET 2.0?
- Managed Provider Classes in ADO.NET
 - Connection
 - Command



- DataReader
- DataAdapter
- DataSet
- Generic database access with DbProviderFactory classes
- Multiple Active Resultsets (MARS)
- **Hands-on lab** – Adding ADO.NET functionality to VB.NET applications

➤ **Section 12 – Windows Forms (Bonus Material)**

- What are Windows Forms?
- Windows Forms Fundamentals
- The partial Keyword
- Handling Events
- Key Namespaces and Classes
- Drawing and Graphics with GDI+
- Adding Windows Controls to forms
 - Adding menus
 - Adding input controls
 - New Version 2 Controls
- Working with Dialogs
- ClickOnce Deployment
- **Hands-on lab** – Creating a Windows Form application in Visual Studio.NET 2005

Please contact your ROI representative to discuss course tailoring!!!