Introduction to Microsoft .NET Framework Programming using VS 2005 (VB)

- **Course Length:** 5 Days

**Course Overview**

This instructor-led course teaches introductory-level developers who are not familiar with the Microsoft .NET Framework or Microsoft Visual Studio 2005 to gain familiarity with the Visual Studio 2005 development environment. Students will also learn basic skills using Microsoft Visual Basic as a programming language.

**Prerequisites**

Before attempting this course, students must have exposure to developing applications in either a graphical or a non-graphical environment. Additionally, they must possess the ability to understand and apply the basics of structured programming, including concepts such as flow control, variables, parameters, and function calls.

**Audience**

The target audience for this course includes novice programmers who have a minimum of three months programming experience and/or intermediate-level programmers who are new to .NET Framework development, and want to learn how to use Visual Basic.

**Certification Exam**

There is no certification exam associate with this course.

**Course Outline**

- **Course Introduction**
  
  Course Introduction
  
  4 min
Module 01 - .NET Framework Overview

.NET Framework Overview
What Is the .NET Framework?
Languages in the .NET Framework
Introduction to the .NET Framework 3.0 Technologies
Developer Tools for .NET Framework Applications
Overview of the .NET Framework Security Architecture
Software Development Process
Software Development Life Cycle Models
Team Development Methodologies
What is Visual Studio 2005?
Structure of Visual Studio 2005 Solutions and Projects
Visual Studio 2005 Application Templates
Components of the Visual Studio 2005 Development Environment
Visual Studio 2005 Toolbox
Solution Explorer and Properties Windows
Visual Studio 2005 Designer Window
Visual Studio 2005 Code Editor Window
Demo - Overview of Visual Studio 2005
Module 1 Review

Module 02 - Building a Simple Windows Forms Application

Building a Simple Windows Forms Application
What Is a Windows Forms Application?
Properties of a Windows Forms Project
What Are Controls?
How to Add Code to a Control
How to Output Information in a Message Box
How to Build a Windows Forms Project
How to Run a Project in Debug Mode
Visual Studio 2005 Configuration Manager
What Are Assemblies?
Demo - Windows Forms
Module 2 Review

Module 03 - Programming Concepts and Terminologies

Programming Concepts and Terminologies
What Is Event-Driven Programming?
What Are Classes and Objects?
What Are Properties, Methods, and Events?
What Are Namespaces?
What Are Exceptions?
What Is the Structure of a .NET Framework Program?
Overview of Methods and Functions
How to Set Properties in Code
How to Call a Method
How to Implement Event Handlers
How to Use Predefined Functionality
How to Reference Namespaces
Module 04 - Introduction to Data Types and Variables
Introduction to Data Types and Variables
What Is the Common Type System?
What Are Value Types and Reference Types?
Guidelines for Choosing a Data Type
What Are Variables and Constants?
Commonly Used Collection Types
How to Create and Use Arrays
How to Define and Use Collections
What is Data Type Conversion?
Implicit Data Type Conversions
How to Use Explicit Conversions
Demo - Data Types & Vars
Demo - Structures
Demo - Value and Reference Types
Demo - Boxing and Unboxing
Module 4 Review

Module 05 - Program Execution
Program Execution
What Is an Expression?
What Are Operators?
How to Specify Operator Precedence and Associativity
Types of Conditional Statements
How to Create If Statements
How to Create Nested If Statements
How to Create Selection Statements
How to Use Comparison Operators
How to Use Logical Operators
Guidelines for Choosing a Decision Structure
How to Create a For Loop
How to Create a For Each Loop
How to Create a While Loop
How to Create a Do Loop
How to Define Exit Statements
Guidelines for Choosing an Iteration Statement
Demo - Program Execution
Module 5 Review

Module 06 - Object-Oriented Programming Fundamentals
Object-Oriented Programming Fundamentals
Classes and Objects
Fields, Properties, Methods, and Events
What Is Encapsulation?
What Is Overloading?
How to Define a New Class
How to Define Access Levels
How to Use Namespaces to Organize Classes
How to Create and Use an Instance of a Class
How Objects Are Allocated and Deallocated
What Are Structures?
Demo - Building Classes
Demo - Overloaded Methods
Module 6 Review

**Module 07 - Building Object-Oriented Applications**  
Building Object-Oriented Applications
What is a Class Diagram?
Introduction to Class Designer
What is Inheritance?
How to Define Base Classes and Derived Classes
What Are Overriding, Hiding, and Shadowing?
What is an Interface?
Demo - Consume Class
Demo - Interfaces
Module 7 Review

**Module 08 - Building a User Interface**  
Building a User Interface
Form-Level Events
Modal and Modeless Forms
How to Manage Multiple Forms
Dialog Boxes in Windows Forms Applications
Introduction to the ToolStrip Control
How to Use the HelpProvider Component
Demo - Windows Forms Interface
Demo - Class for Multiple Forms
Demo - ToolStrip
Module 8 Review

**Module 09 - Validating User Input**  
Validating User Input
Introduction to Intrinsic Validation
Validation Properties of a TextBox Control
How to Use the MaskedTextBox Control
How to Use Boolean Functions to Validate Data
How to Modify User Input
What Are Validation Events?
How to Validate Multiple Fields on a Form
How to Designate Accept and Cancel Buttons for a Form
Demo - Data Validation
Demo - Validating Events
Module 9 Review
Module 10 - Application Errors Debugging and Exception Handling
Application Errors Debugging and Exception Handling
Syntax Errors
Run-Time Errors
Logic Errors
What is the Debug Toolbar?
How to Set Breakpoints
How to Step Through and Over Code
How to Use Debug Windows
How to Use a Try…Catch Block
How to Use a Finally Block
How to Throw an Exception
Demo - Debugging & Exception
Demo - Debugging
Demo - Exceptions
Module 10 Review

Module 11 - Accessing Data in a .NET Framework Application
Accessing Data in a .NET Framework Application
What is SQL?
What is ADO.NET?
What is XML?
How to Create a Data Source
How to Bind a Control to a Data Source
Describe the ADO.NET Object Model
Demo - ADO Example
Module 11 Review

Module 12 - Creating Simple Web Applications
Creating Simple Web Applications
How to Create a Web Application
How to Add Controls to a Web Page
How to Implement Event Handling
How to Deploy a Web Application
Security in Web Applications
How to Create an XML Web Service
How to Discover an XML Web Service
Demo - ASP.NET Example
Module 12 Review

Module 13 - Exploring .NET Framework 3.0 Technologies
Exploring .NET Framework 3.0 Technologies
What Is Windows Presentation Foundation?
What Is Windows Communication Foundation?
What Is Windows Workflow Foundation?
What Is Windows CardSpace?
History of Windows Presentation Foundation
Features of Windows Presentation Foundation
What Is XAML?
Module 14 - Testing and Deploying .NET Framework Applications

Testing and Deploying .NET Framework Applications
The Need for Software Testing
Types of Software Test
Tools for Software Testing
What is Object Test Bench?
The Object Test Bench Tool Window
How to Create and Display Object Test Bench Objects
Options for Application Deployment
What Is ClickOnce?
How to Publish a .NET Framework Application by Using ClickOnce
How to Install a ClickOnce Application
How to Create a Windows Installer Setup Project
How to Set Deployment Project Properties
Deployment Editors
Demo - ClickOnce
Module 14 Review

Total Duration: 16h 12m