

4995 — Instructor-led

Course Length: 5 days

Course Description:

- Describe the .NET Framework.
- Create applications with Visual Studio 2005.
- Describe Visual Basic .NET and Visual C# language and syntax features.
- Use essential object-oriented programming features.
- Use advanced object-oriented programming features.
- Explain security in the .NET Framework.
- Access data by using ADO.NET.
- Build Windows Presentation Foundation applications.
- Describe distributed applications, and create distributed applications with Windows Communication Foundation.
- Monitor .NET Framework applications by using instrumentation.

- Compile, test, and deploy .NET Framework applications.
- Interoperate with unmanaged code (optional).
- Describe software design and development (optional).

Prerequisites:

Before attending this course, students must have:

- Professional experience with programming in C, C++, earlier versions of Visual Basic or C#, Java, or another programming language.
- Familiarity with the Microsoft .NET Framework strategy as described on the Microsoft .NET Homepage at <http://www.microsoft.com/net>.
- Familiarity with the .NET Framework versions 2.0 and 3.0 as described on the MSDN Developer Center site at <http://msdn.microsoft.com/netframework/programming/fundamentals/default.aspx>.

Course Outline

Module 1: Overview of the Microsoft .NET Framework

Lessons:

- Introduction to the .NET Framework
- .NET Framework 3.0 Technologies

Module 2: Creating Applications with Visual Studio 2005

Lessons:

- Introduction to Visual Studio 2005
- Managing Solutions and Projects
- Managing the Integrated Development Environment
- Writing Code with Visual Studio 2005

Lab 2: Creating Applications with Visual Studio 2005

- Creating a Windows Forms Application by Using Visual Studio 2005
- Locating and Fixing Errors by Using the Error List Window
- Creating and Using Code Snippets

Module 3: Examining Language and Syntax Features

Lessons:

- Syntax Basics
- Language Enhancements

Lab 3: Examining Language and Syntax Features

- Using Essential Language Constructs
- Handling Run-Time Errors
- Using Generic Collection Classes

Module 4: Essentials of Object-Oriented Programming

Lessons:

- Object-Oriented Programming Concepts
- Defining a Class
- Creating a Class Instance

Lab 4: Essentials of Object-Oriented Programming

- Creating a SalesPerson Class
- Creating and Using a SalesPerson Instance

Module 5: Advanced Object-Oriented Programming

Lessons:

- Advanced Object-Oriented Programming Concepts
- Implementing Inheritance
- Defining and Implementing Interfaces
- Creating and Using Delegates and Events

Lab 5: Advanced Object-Oriented Programming

- Creating a Base Class
- Creating Derived Classes
- Implementing an Interface
- Defining and Using Delegates and Events

Module 6: Security in the .NET Framework

Lessons:

- Security Overview
- Implementing Code Access Security
- Implementing Role-Based Security
- Using Cryptographic Services

Lab 6: Security in the .NET Framework

- Implementing Code Access Security
- Implementing Role-Based Security

Module 7: Accessing Data by Using ADO.NET

Lessons:

- Overview of Data Access
- Reading and Writing Relational Data
- Reading and Writing XML Data

Lab 7: Accessing Data by Using ADO.NET

- Creating and Running Simple Commands
- Creating and Running Query Commands
- Binding Data to Controls in a Form
- Reading and Writing a DataSet as XML Data

Module 8: Building Windows Presentation Foundation Applications

Lessons:

- Introduction to Windows Presentation Foundation
- Introduction to XAML
- Programming Windows Presentation Foundation Applications

Lab 8: Building Windows Presentation Foundation Applications

- Creating a Windows Presentation Foundation Application
- Implementing the Code-Behind for the Application
- Testing the Application

Module 9: Creating Distributed Applications

Lessons:

- Overview of Distributed Applications
- Creating and Consuming XML Web Services
- Building Windows Communication Foundation Services and Clients

Lab 9: Creating Distributed Applications

- Creating and Consuming an XML Web Service
- Building a Windows Communication Foundation Service
- Building a Client for a Windows Communication Foundation Service

Module 10: Monitoring .NET Framework Applications by Using Instrumentation

Lessons:

- Introduction to Instrumentation
- Code Tracing and Debugging

- Performance Counters
- Event Logs

Lab 10: Monitoring .NET Framework Applications by Using Instrumentation

- Adding Tracing to an Application
- Testing the Tracing Statements
- Adding Event Logging to an Application

Module 11: Compiling, Testing, and Deploying .NET Framework Applications

Lessons:

- Introduction to Assemblies
- Overview of the Microsoft Build Engine (MSBuild)
- Testing .NET Framework Applications
- Deploying .NET Framework Applications by Using Click-Once
- Deploying .NET Framework Applications by Using Windows Installer

Lab 11: Compiling, Testing, and Deploying .NET Framework Applications

- Delay Signing a Component Assembly
- Creating a Merge Module Project
- Deploying an Application by Using Windows Installer
- Installing and Testing the Application

Module 12: Interoperating with Unmanaged Code (Optional)

Lessons:

- Overview of Interoperability
- Calling Unmanaged Functions by Using Platform Invoke
- Calling COM Objects from Managed Code

Lab 12: Interoperating with Unmanaged Code

- Calling a Windows API from Managed Code
- Calling a COM Object from Managed Code

Module 13: Software Design and Development (Optional)

Lessons:

- Introduction to the Software Development Life Cycle
- Introducing the Microsoft Solutions Framework
- Developing Applications with the Capability Maturity Model Integration
- Introducing Agile Software Development

Lab 13: Software Design and Development

- Managing a Software Development Process
- Discussion