



Course Outline

Course 4994AL: Introduction to Programming Microsoft .NET Framework Applications with Microsoft Visual Studio 2005

Five weeks; Microsoft Official Distance Learning (MODL)

Introduction

Course 4994AL: Five weeks; Microsoft Official Distance Learning (MODL)

This Distance Learning version of the course consists of 10 online live instructor-led sessions over five weeks (two hours for each session). Additional self-paced e-learning content, scenario-based labs, and assessments accompany these sessions. This course provides introductory-level developers familiarity with the Microsoft .NET Framework and Microsoft Visual Studio 2005 development environment. Students will also learn basic skills using either Microsoft Visual Basic or Microsoft Visual C# as a programming language.

Audience

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

At Course Completion

After completing this course, students will be able to:

- Create a simple Windows Forms application and explain programming fundamentals.
- Create and use data types and variables, and control program execution by using conditional statements and loops.
- Explain the fundamentals of object-oriented programming and create simple object-oriented applications.
- Develop user interfaces in a Visual Studio 2005 application.
- Validate user input on a Windows form.
- Implement debugging and exception handling in a Visual Studio 2005 application.
- Access data in a Visual Studio 2005 application.
- Create simple Web applications and XML Web services.
- Explain the key features of the .NET Framework version 3.0 technologies.
- Test and deploy Microsoft .NET Framework applications.

Prerequisites

Before attending this course, students must:

- Have exposure to developing applications in either a graphical or a non-graphical environment.
- Be able to understand and apply the basics of structured programming, including concepts such as flow control, variables, parameters, and function calls.

In addition, it is recommended, but not required, that students have completed:

- ILT Course 2667: Introduction to Programming.



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Module 1-1: Programming Fundamentals

This module introduces the .NET Framework and describes the key features of Visual Studio 2005. It also explains how to create a Windows Forms application and explains important programming concepts and terminology. This module also covers the main elements of a program and explains how to create and work with items such as functions, properties, and methods. Finally, this module provides guidelines on areas such as naming conventions and code documentation.

Lessons

- Introduction to the .NET Framework and Visual Studio 2005
- Creating a Simple Windows Forms Application
- Understanding Programming Concepts
- Defining Program Structure and Flow
- Styling and Writing Code

Lab 1-1: Programming Fundamentals

After completing this module, students will be able to:

- Describe the key features of the .NET Framework and Visual Studio 2005.
- Explain how to create a simple Windows Forms application.
- Explain basic programming concepts.
- Define program structure and flow.
- Explain guidelines for styling and writing code.

Module 1-2: Data Types, Variables, and Program Execution

This module introduces data types, variables, and constants and explains how to use them. It also explains how to use collections and data type conversion. Finally, this module describes how to control program execution by writing expressions, conditional statements, and iteration statements.

Lessons

- Introduction to Data Types
- Defining and Using Variables
- Defining and Using Collections
- Converting Data Types
- Controlling Program Execution

Lab 1-2: Data Types, Variables, and Program Execution

After completing this module, students will be able to:

- Explain the main features of data types.
- Define and use variables.
- Define and use collections.
- Explain data type conversion.
- Describe how to control program execution.



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Module 2-1: Creating Object-Oriented Applications

This module introduces students to the concepts of object-oriented programming, defines important terminology, and shows the syntax for defining classes and creating instances. This module describes how to design classes by using the Class Designer tool in Visual Studio, and also describes how to use inheritance and interfaces.

Lessons

- Fundamentals of Object-Oriented Programming
- Designing Classes with Class Designer
- Implementing Inheritance
- Defining and Implementing Interfaces

Lab 2-1: Creating Object-Oriented Applications

After completing this module, students will be able to:

- Describe the fundamentals of object-oriented programming.
- Design classes with the Class Designer tool.
- Implement inheritance.
- Define and implement interfaces.

Module 2-2: Building a Windows Forms User Interface

This module explains how to develop an application by using features such as modal and modeless forms, menus, toolbars, status bars, tool tips, and the HelpProvider control.

Lessons

- Managing Forms and Dialog Boxes
- Creating Toolbars
- Creating Menus
- Providing User Assistance

Lab 2-2: Building a Windows Forms User Interface

After completing this module, students will be able to:

- Manage forms and dialog boxes.
- Create toolbars.
- Create menus.
- Provide user assistance.

Module 3-1: Validating User Input

This module explains how to restrict user input on a form, and how to use field-level and form-level validation.

Lessons

- Restricting User Input
- Implementing Field-Level Validation
- Handling Validation Events
- Implementing Form-Level Validation



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Lab 3-1: Validating User Input

After completing this module, students will be able to:

- Restrict user input.
- Implement field-level validation.
- Handle validation events.
- Implement form-level validation.

Module 3-2: Debugging and Exception Handling

This module introduces students to the types of errors that can occur in an application, and describes how to use a combination of debugging and exception handling to detect and diagnose these errors.

Lessons

- Types of Errors
- Debugging Applications
- Introduction to Exception Handling
- Handling Exceptions in Applications

Lab 3-2: Debugging and Exception Handling

After completing this module, students will be able to:

- Describe the types of errors that can occur in an application.
- Debug an application.
- Describe the key features of exception handling.
- Handle exceptions in an application.

Module 4-1: Accessing Data

This module introduces students to data access in .NET Framework applications, and shows how to access data both by using the Visual Studio integrated development environment (IDE) and by writing code.

Lessons

- Overview of Data Access
- Accessing Data by Using the Visual Studio 2005 Integrated Development Environment
- Programmatic Access to Data
- Accessing XML Data

Lab 4-1: Accessing Data

After completing this module, students will be able to:

- Describe the key features of data access in a .NET Framework application.
- Access data by using tools in the Visual Studio 2005 IDE.
- Access data programmatically by using ADO.NET and the XmlReader class.



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- Describe the key features of XML and access XML data.

Module 4-2: Creating Web Applications and XML Web Services

This module introduces students to ASP.NET, and describes how to create simple Web applications and XML Web services.

Lessons

- Introduction to Web Applications
- Creating Web Applications
- Introduction to XML Web Services
- Creating and Using XML Web Services

Lab 4-2: Creating Web Applications and XML Web Services

After completing this module, students will be able to:

- Describe the key features of Web applications.
- Create a Web application in ASP.NET.
- Describe the key features of XML Web services.
- Create and use an XML Web service in ASP.NET.

Module 5-1: Exploring the .NET Framework 3.0 Technologies

This module introduces the new .NET Framework 3.0 technologies and explains how to create a Windows Presentation Foundation application and a Windows Communication Foundation service.

Lessons

- Introduction to the .NET Framework 3.0 Technologies
- Introduction to Creating Windows Presentation Foundation Applications
- Introduction to Windows Communication Foundation
- Building Windows Communication Foundation Services and Clients

Lab 5-1: Exploring the .NET Framework 3.0 Technologies

After completing this module, students will be able to:

- Describe the .NET Framework 3.0 technologies.
- Describe how to create a Windows Presentation Foundation application.
- Describe the main features of Windows Communication Foundation.
- Explain how to build Windows Communication Foundation services and clients.

Module 5-2: Testing and Deploying Microsoft .NET Framework Applications

This module provides an overview of software testing and explains how to use the Object Test Bench. It also explains how to deploy .NET Framework applications by using both Microsoft Windows Installer and Microsoft ClickOnce.

Lessons

- Overview of Testing
- Creating Object Test Bench Objects



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- Deploying Microsoft .NET Framework Applications by Using ClickOnce
- Deploying Microsoft .NET Framework Applications by Using Windows Installer

Lab 5-2: Testing and Deploying Microsoft .NET Framework Applications

After completing this module, students will be able to:

- Describe the main features of application testing.
- Create object test bench objects.
- Deploy Microsoft .NET Framework applications by using ClickOnce.
- Deploy Microsoft .NET Framework applications by using Windows Installer.