



www.compvisions.com  
16 Corporate Woods Blvd.  
Albany, NY 12211

# Computer Visions Course Outline

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## **Corporate Training Solutions**

Corporations look to us to train their employees. Why? Because our proven training methods have increased employee proficiency and productivity. We assign one person to each of our corporate clients to ensure quality service, and we also offer extranet Web registration, management, reporting and billing for all clients. Simplicity, quality and outstanding service are our hallmarks.

## **Consulting Solutions**

Consulting is about trust,

## **4994: Introduction to Programming Microsoft .NET Applications with Microsoft Visual Studio 2005**

### **Description:**

This five-day instructor-led course enables 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 either Microsoft Visual Basic or Microsoft Visual C# as a programming language.

### **Course Outline:**

#### **Module 1: Getting Started**

This module introduces the .NET Framework and the software development life cycle. It also describes the key features of Visual Studio 2005.

#### **Lessons**

- Introduction to Microsoft .NET and the .NET Framework
- Introduction to the Software Development Life Cycle
- Exploring Visual Studio 2005

#### **Lab 1: Getting Started**

- Working in the Development Environment

#### **Module 2: Creating a Simple Windows Forms Application**

This module explains how to create a Windows Forms application, how to add controls to a form, and how to compile and run the application.

#### **Lessons**

- Creating a Windows Forms Project
- Adding Controls to a Windows Forms Project
- Compiling and Running a Windows Forms Project

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#### **Classroom and Computer Rentals**

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#### **Lab 2: Creating a Simple Windows Forms Application**

- Creating a Windows Forms Application
- Adding Controls to the Main Form
- Compiling and Testing the Application

#### **Module 3: Programming Fundamentals**

This module explains important programming concepts and terminology. It 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**

- Understanding Programming Concepts
- Defining Program Structure and Flow
- Styling and Writing Code

#### **Lab 3: Programming Fundamentals**

- Displaying the Current Date on a Form
- Adding a New Form to the Application
- Adding Controls to the New Form

#### **Module 4: Data Types and Variables**

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.

##### **Lessons**

- Introduction to Data Types
- Defining and Using Variables
- Defining and Using Collections
- Converting Data Types

#### **Lab 4: Data Types and Variables**

- Implementing Variables and Constants
- Implementing Arrays and Enumerations

#### **Module 5: Controlling Program Execution**

This module describes how to control program execution by writing expressions, conditional statements, and iteration statements.

##### **Lessons**

- Writing Expressions

- Creating Conditional Statements
- Creating Iteration Statements

#### Lab 5: Controlling Program Execution

- Checking User Input
- Enabling and Disabling Controls

### **Module 6: Fundamentals of Object-Oriented Programming**

This module introduces students to the concepts of object-oriented programming, defines important terminology, and shows the syntax for defining classes and creating instances.

#### **Lessons**

- Introduction to Object-Oriented Programming
- Defining a Class
- Creating a Class Instance

#### Lab 6: Fundamentals of Object-Oriented Programming

- Creating a SalesPerson Class
- Creating and Using a SalesPerson Object

### **Module 7: Creating Object-Oriented Applications**

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**

- Designing Classes with the Class Designer Tool
- Implementing Inheritance
- Defining and Implementing Interfaces

#### Lab 7: Creating Object-Oriented Applications

- Creating a Base Class
- Creating Derived Classes

### **Module 8: Building a 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 Menus and Toolbars

- Providing User Assistance

#### Lab 8: Building a User Interface

- Adding a Menu and a Toolbar to an Application
- Adding a Status Bar and Tooltips to an Application

### **Module 9: 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
- Implementing Form-Level Validation

#### Lab 9: Validating User Input

- Adding an ErrorProvider Component to a Form
- Providing Visual Cues to the User by Enabling an OK Button

### **Module 10: 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
- Handling Exceptions in Applications

#### Lab 10: Debugging and Exception Handling

- Detecting Logic Errors
- Handling Run-Time Errors

### **Module 11: 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

#### Lab 11: Accessing Data

- Displaying Data by Using a DataGridView Control
- Access Data Programmatically by Using ADO.NET

### **Module 12: 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**

- Creating Web Applications
- Creating and Using XML Web Services

#### Lab 12: Creating Web Applications and XML Web Services

- Creating a Web Application
- Creating and Using an XML Web Service

### **Module 13: Exploring .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 Windows Presentation Foundation
- Introduction to Windows Communication Foundation

#### Lab 13: Exploring .NET Framework 3.0 Technologies

- Building a Windows Presentation Foundation Application
- Building a Windows Communication Foundation Service
- Accessing a Windows Communication Foundation Service from a Windows Presentation Foundation Client

### **Module 14: Testing and Deploying Microsoft .NET Framework Applications**

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

#### **Lessons**

- Overview of Testing
- Creating Object Test Bench Objects

- Deploying Microsoft .NET Framework Applications