

# Object-Oriented Programming in VB.NET (5 Days)

**Custom Training Institute**  
9085 Coyote Springs Road  
Prescott Valley, AZ 86314  
(928) 772-3811  
FAX (928) 441-6444

## Object-Oriented Programming in VB.NET (CTI 420)

*This course teaches the fundamentals of programming with VB.NET, using an object-oriented perspective. The course also examines the relationship between VB.NET and the .NET Framework.*

Prerequisites: *The student must have programming experience in a high-level language.*

Minimum software requirements: *Microsoft Windows 2000 or XP, Visual Studio.NET 2003 or 2005; Visual Basic 2005 Express Edition can also be used.*

Minimum hardware requirements for all machines: *Pentium PC running at 600 MHz; 256 Mb RAM; 3 GB free hard disk space before installation; Internet access; machines must be networked.*

Microsoft PowerPoint and Internet access on instructor's workstation for presentation purposes.

### Module 1: .NET: What You Need to Know

- .NET Executables and the CLR
- A .NET Testbed for VB.NET Programming
- Visual Studio .NET

### Module 2: Fundamentals of VB.NET

- Program Structure
- Namespaces
- Data Types
- Variables
- Conversions
- Operators and Expressions
- Console I/O

### Module 3: Control Structures

- If Statement
- Select Case Statement
- Do/Loop Statement
- For/Next Statement

### Module 4: Procedures

- Subroutines
- Functions
- Pass-by-value vs. Pass-by-reference
- Access modifiers
- Overloading
- Optional Parameters

### Module 5: Advanced Data Types

- Arrays
- Enumerations
- Structures

### Module 6: Exception Handling

- Error Detection
- Exception Handling

### Module 7: Object-Oriented Programming

- Object-Oriented Concepts
- Defining Classes
- Methods and Properties
- Shared Data and Methods
- Constructors

### Module 8: Inheritance

- Inheritance
- Controlling Base Class Construction
- Access Control
- Polymorphism
- Events
- Abstract and Not Inheritable Classes
- Type Conversion in Inheritance

### Module 9: Interfaces

- Interface Fundamentals
- Programming with Interfaces
- Using Interfaces at Runtime
- Resolving Ambiguities

### Module 10: Windows Forms

- Building a Windows Application
- Under the Hood of a Windows Application
- Common Controls

### Module 11: User Interface Features

- Dialog Boxes
- Menus
- Status Bars
- Toolbars

### Module 12: Interacting with Databases Using Windows Forms

- ADO.NET
- Building Commands and Adapters with Wizards
- DataSet
- DataGrid
- Binding a Control to a Dataset

**Object-Oriented  
Programming in  
VB.NET (CTI 420) -  
continued**

---

**Module 13: New Features in VB.NET 2.0**

- Visual Studio 2005
- Partial Classes
- Generic Types
- Continue Statement
- IsNot Operator
- Operator Overloading
- Properties with Mixed Access Levels
- Built-In My Object
- Other New Features

**Appendix A: Using Visual Studio .NET**

- Overview of Visual Studio .NET
- Creating a Console Application
- Project Configurations
- Debugging