ASP.NET 4.0 Programming Using Visual Basic.NET

**Duration:** 5 Days

**Students Will Learn:**
- Using Web Forms and Handling Events
- Working with ASP.NET Controls
  - Designing Master Pages
  - Managing State
  - Building Secure Web Sites
  - Interacting with Databases
  - Using ASP.NET Data Bound Controls

**Course Description:** This course provides students with hands on experience using Visual Studio to create dynamic web applications with the ASP.NET 4.0 Framework using VB.NET. This class provides a thorough introduction to the VB.NET programming language, including coverage of the essentials of the VB.NET programming language, built in data types, operators, control structures, classes and methods.

Students then learn how to leverage the power of the .NET Framework to build web user interfaces. Students will learn how to build web forms and work with a variety of ASP.NET controls, including validation controls and user controls. Students explore why state management is difficult within web applications and learn many different ASP.NET techniques for managing state, including application, session and view state objects, as well as effective use of cookies. Students also learn how to use ADO.NET to interact with data sources and display data.

Other topics include: error handling and debugging; using Web.config to control application configuration; uploading files and sending e-mail; using master pages to provide a consistent look and feel to a web application; developing and consuming web services; file I/O; using XML data with DataSets; and deploying ASP.NET applications. Comprehensive labs and exercises provide the students with experience creating and deploying dynamic web applications.

This course provides thorough coverage of the use of **Web Forms** for web applications. Students requiring additional coverage of **Windows Forms** or **Windows Presentation Foundation** should contact HOTT to discuss additional training available.

**Course Prerequisites:** Knowledge of fundamental HTML syntax is helpful, but not required. Prior experience with a scripting or programming language is required.
### ASP.NET 4.0 Programming Using Visual Basic.NET Course Overview:

#### Procedures and Parameters
- Subroutines vs. Functions
- Defining Static and Instance Procedures
- Passing Parameters by value and by reference
- Overloading Procedures
- Using Variable Length Parameter Lists

#### Object-Oriented Programming
- Overview of Object-Oriented Programming
- Working With Enumerations
- Defining and Using Classes
- Extending .NET Classes via Inheritance
- Defining and Implementing Interfaces
- Understanding the Role of Interfaces in .NET

#### Collections
- Defining and Using Arrays
- Understanding System.Array
- Using .NET Collections
- Working with ArrayLists and Hashtables
- Using .NET Generic Collections
- Working with Lists and Dictionaries
- Introducing LINQ

#### Creating ASP.NET Pages
- Building ASP.NET Pages
- Using Page Directives
- Working with the Code-Behind Model
- Understanding the Life-cycle of a Web Form
- Handling Page Events

#### ASP.NET 4.0 Features
- Overview of ASP.NET 4.0
- Understanding Client-Side vs. Server-Side Execution
- Working with Web Forms
- Understanding ASP.NET Application Folders
- Using Web.config

#### Handling Events
- Understanding the Event Driven Programming Model
- Writing Event Handlers
- Understanding PostBack versus Non-PostBack Events
- Sharing Event Handlers between Events
- Using Global.asax

#### Using Controls
- Working with HTML Controls
- Working with Web Controls
- Creating Controls at Runtime
- Defining and Using Custom User Controls

#### Master Pages
- Understanding the Master Page Architecture
- Designing a Master Page
- Designing Content Pages

#### Validation
- Understanding the ASP.NET Validation Controls
- Performing Client-Side Validation

#### ADO.NET
- Understanding the ADO.NET Object Model
- Connected vs. Disconnected Access
Performing Server-Side Validation
Using the Regular Expression Validator
Customizing Validation
Working with Validation Groups

Using a Connection to Connect to a Data Source
Using a Command to Execute Queries and Stored Procedures
Using a DataReader to Work with Cursors
Using the DataSet with Disconnected Data
Using DataAdapters with DataSets

Maintaining State
Understanding why the Web is Stateless
Maintaining State within ASP.NET Applications
Using the Application Object
Using the Session Object
Using the ViewState Object
Reading and Writing Cookies
Using the Query String

Data Binding in ASP.NET 4.0
Understanding ASP.NET Data Binding
Examining ASP.NET Data Bound Controls
Using the ListBox Control
Using the GridView Control
Using the DetailsView Control
Using the FormView Control

Using XML
Understanding XML and XML Schemas
Reading XML Data with a DataSet
Writing XML Data with a DataSet

Introduction to Web Services
Overview of Web Services
Creating a Web Service
Using WSDL and Proxy Classes
Consuming a Web Service

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Understanding XML and XML Schemas
Reading XML Data with a DataSet
Writing XML Data with a DataSet

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Securing ASP.NET Applications
Understanding the ASP.NET 4.0 Security Model
Authenticating Users
Authorization User Requests
Using the ASP.NET Login Controls
Using the ASP.NET Web Site Administration Tool

Deploying ASP.NET Applications
Overview of ASP.NET 4.0 Deployment Options
Using Copy Web Site Tool
Using Publish Web Site Tool
Using Web Setup Projects