

Introduction to Web Development with Microsoft Visual Studio 2010

Course MS 10267

About this Course

This five-day instructor-led course provides knowledge and skills on developing Web applications by using Microsoft Visual Studio 2010.

Audience Profile

This course is intended for Web developers who are beginners and have knowledge of Hypertext Markup Language (HTML) or Dynamic HTML (DHTML), along with some knowledge of a scripting language such as Visual Basic Scripting Edition or Microsoft Jscript.

Students are required to have the following skills:

Ability to construct a simple Web page using a Microsoft or 3rd Party tool. For example, create or customize a Web Page on a SharePoint site.

At Course Completion

After completing this course, students will be able to:

- Explore ASP.NET Web applications in Microsoft Visual Studio 2010.
- Create Web applications by using Microsoft Visual Studio 2010 and Microsoft .NET-based languages.
- Create a Microsoft ASP.NET Web Form.
- Add functionality to a Microsoft ASP.NET Web Form.
- Implement master pages and user controls.
- Validate user input.
- Debug Microsoft ASP.NET Web applications.
- Manage data in an ASP.NET 3.5 Web application.
- Manage data access tasks by using LINQ.
- Manage data by using ASP.NET Dynamic Data.
- Create a Microsoft ASP.NET AJAX application.
- Consume and Windows Communication Foundation (WCF) services.
- Manage state in Web applications.
- Configure and deploy a Microsoft ASP.NET Web application.
- Secure a Microsoft ASP.NET Web application.
- Implement new technologies supported by Visual Studio 2010 for Web development.

Prerequisites

Before attending this course, students must have at least one month of experience in .NET technologies. In addition to their professional experience, students who attend this training should have the following technical knowledge:

- Knowledge of HTML or DHTML, including:
 - Tables
 - Images
 - Forms
- Programming experience using Visual Basic .NET or Visual C# .NET, including:
 - Declaring variables
 - Using loops
 - Using conditional statements

The completion of Course 2667, Introduction to Programming, satisfies the preceding prerequisite programming skills requirement.

Course Outline
Module 1: Exploring Microsoft ASP.NET Web Applications in Microsoft Visual Studio 2010 This module explains the key features of Microsoft .NET Framework and Microsoft ASP.NET. It helps you view the complete Web application that you build in the labs throughout this course

Lessons

- Introduction to the .NET Framework
- Overview of ASP.NET
- Overview of the Lab Application

Lab : There are no labs for this module

After completing this module, students will be able to:

- Describe the .NET Framework.
- Describe ASP.NET.
- Describe the Lab Application.

Module 2: Creating Web Applications by Using Microsoft Visual Studio 2010 and Microsoft .NET–Based Languages

This module describes the different programming languages that are available when you develop Microsoft .NET Framework applications. It explains the fundamental aspects of writing code and creating components by using two of the .NET Framework–based languages, Microsoft Visual Basic and Microsoft Visual C#. It provides an overview of Microsoft Visual Studio 2010. It also explains how to create a simple Web application.

Lessons

- Choosing a Programming Language
- Overview of Visual Studio 2010
- Creating a Simple Web Application

Lab : Creating Web Applications by Using Microsoft Visual Studio 2010 and Microsoft .NET–Based Languages

- Exercise 1: Creating an ASP.NET Web Site
- Exercise 2: Adding and Configuring Server Controls in Web Forms
- Exercise 3: Building and Deploying an ASP.NET Web Application

After completing this module, students will be able to:

- Choose a programming language.
- Describe Visual Studio 2010.
- Create a simple Web application.

Module 3: Creating a Microsoft ASP.NET Web Form

This module explains how to create Web Forms and populate them with server controls.

Lessons

- Creating Web Forms
- Adding and Configuring Server Controls in a Web Form

Lab : Creating a Microsoft ASP.NET Web Form

- Exercise 1: Creating a Web Form
- Exercise 2: Adding and Configuring Server Controls in a Web Form

After completing this module, students will be able to:

- Create Web Forms.
- Add and configure server controls in a Web Form.

Module 4: Adding Functionality to a Microsoft ASP.NET Web Form

This module describes the various methods that you can use to add code to your Microsoft ASP.NET Web application. It explains how to use Web server controls, event handlers, code-behind files, and components. In addition, it explains how to use page events, especially the Page_Load event.

Lessons

- Working with Code-Behind Files
- Handling Server Control Events
- Creating Classes and Components by Using Visual Studio 2010
- Handling Page Events

Lab : Adding Functionality to a Microsoft ASP.NET Web Form

- Exercise 1: Implementing Code in a Web Application
- Exercise 2: Creating Event Procedures
- Exercise 3: Creating an Entity Component
- Exercise 4: Handling Page and Control Events

After completing this module, students will be able to:

- Work with code-behind files.
- Handle server control events.
- Create classes and components by using Microsoft Visual Studio 2010.
- Handle page events.

Module 5: Implementing Master Pages and User Controls This module explains how to create and implement master pages and how to implement user controls in a Web application. **Lessons**

- Creating Master Pages
- Adding User Controls to an ASP.NET Web Form

Lab : Implementing Master Pages and User Controls

- Exercise 1: Adding and Applying a Master Page
- Exercise 2: Converting Web Forms to Content Pages and User Controls

After completing this module, students will be able to:

- Create master pages.
- Add user controls to a Microsoft ASP.NET Web Form.

Module 6: Validating User Input

This module provides an overview of user input validation. It covers information on adding, positioning, and configuring validation controls on a Web Form. In addition, it covers information on validating Web Forms.

Lessons

- Overview of User Input Validation
- ASP.NET Validation Controls
- Validating Web Forms

Lab : Validating User Input

- Exercise 1: Adding Validation Controls
- Exercise 2: Configuring Validation Controls
- Exercise 3: Adding Server-Side Validation

After completing this module, students will be able to:

- Describe user input validation
- Implement Microsoft ASP.NET validation controls
- Validate Web Forms

Module 7: Troubleshooting Microsoft ASP.NET Web Applications

This module describes the steps required to enable tracing and debugging, including how you can use debugging and tracing in a Web application.

Lessons

- Debugging in ASP.NET
- Tracing in ASP.NET

Lab : Debugging Microsoft ASP.NET Web Applications

- Exercise 1: Debugging a Web Application
- Exercise 2: Tracing a Web Application

After completing this module, students will be able to:

- Perform debugging in Microsoft ASP.NET
- Perform tracing in ASP.NET

Module 8: Managing Data in an Microsoft ASP.NET 4.0 Web Application

This module provides an overview of Microsoft ADO.NET. It explains how to programmatically work with data by using ADO.NET and how to create a connection to access the data stored in a Microsoft SQL Server database. In addition, it explains how to use the DataSet and DataReader objects to support the local data storage and data manipulation requirements of Web Forms.

Lessons

- Overview of ADO.NET
- Connecting to a Database
- Managing Data

Lab : Managing Data in an ASP.NET 4.0 Web Application

- Exercise 1: Connecting to a Data Source
- Exercise 2: Binding a Server Control to a Data Source
- Exercise 3: Modifying a Data Source

After completing this module, students will be able to:

- Describe ADO.NET.
- Connect to a database.
- Manage data.

Module 9: Managing Data Access Tasks by Using LINQ

This module explains what LINQ is and how you can use LINQ to manage both XML data and Microsoft SQL Server data in a Microsoft ASP.NET Web application by using Web Server controls and code.

Lessons

- Overview of LINQ
- Managing XML Data by Using LINQ to XML
- Managing SQL Data by Using LINQ to SQL and LINQ to Entities

Lab : Managing Data Access Tasks by Using LINQ

- Exercise 1: Loading Data by Using the XmlDataSource Control
- Exercise 2: Displaying Data by Using LINQ to XML
- Exercise 3: Saving Data by Using LINQ to Entities

After completing this module, students will be able to:

- Describe language-integrated query (LINQ).
- Manage XML data by using LINQ to XML.
- Manage SQL data by using LINQ.

Module 10: Managing Data by Using Microsoft ASP.NET Dynamic Data This module provides an overview of Microsoft ASP.NET Dynamic Data. It also covers information on applying ASP.NET Dynamic Data. In addition, it explains how to customize ASP.NET Dynamic Data applications.**Lessons**

- Overview of ASP.NET Dynamic Data
- Applying ASP.NET Dynamic Data
- Customizing ASP.NET Dynamic Data Applications

Lab : Managing Data by Using ASP.NET Dynamic Data

- Exercise 1: Adding Dynamic Data to an Existing Web Site
- Exercise 2: Registering LINQ to Entities by Using Dynamic Data
- Exercise 3: Map, Clean and Test Solution

After completing this module, students will be able to:

- Describe ASP.NET Dynamic Data
- Apply ASP.NET Dynamic Data
- Customize ASP.NET Dynamic Data applications

Module 11: Creating a Microsoft ASP.NET Ajax-enabled Web Forms Application

This module provides an overview of Microsoft ASP.NET AJAX and explains how to create an ASP.NET AJAX application. It also introduces the ASP.NET AJAX Control Toolkit, and explains how to install the toolkit and add controls from the toolkit to a Web application.

Lessons

- Introduction to Ajax
- Creating an ASP.NET Ajax Application by Using the Ajax Features for ASP.NET
- Extending an ASP.NET Web Forms Application by Using the Ajax Control Toolkit

Lab : Creating a Microsoft ASP.NET Ajax-Enabled Web Forms Application

- Exercise 1: Creating a Modal About Box
- Exercise 2: Customizing Dynamic Data Field Templates with Ajax Server Controls

- Exercise 3: Adding the Country Import Progress Indicator

After completing this module, students will be able to:

- Describe ASP.NET AJAX.
- Create an ASP.NET AJAX application by using the ASP.NET AJAX extensions.
- Extend an application by using the ASP.NET AJAX Control Toolkit.

Module 12: Consuming Microsoft Windows Communication Foundation Services

This module provides an overview of Windows Communication Foundation services. In addition, this module describes how to call a Windows Communication Foundation (WCF) service directly by using a browser and a proxy from a Web application.

Lessons

- Overview of Windows Communication Foundation Services
- Calling Windows Communication Foundation Services
- Working with WCF Data Services

Lab : Consuming Windows Communication Foundation Services

- Exercise 1: Creating a WCF Service Reference Proxy
- Exercise 2: Calling a WCF Service Method from a Web Form
- Exercise 3: Implementing WCF Data Services

After completing this module, students will be able to:

- Describe WCF services.
- Call WCF services.
- Consume Windows Communication Foundation services.

Module 13: Managing State in Web Applications

This module explains how to manage state in a Microsoft ASP.NET Web application.

Lessons

- State Management
- ASP.NET Profiles
- ASP.NET Caching

Lab : Managing State in Web Applications

- Exercise 1: Examining the View State
- Exercise 2: Caching Countries
- Exercise 3: Displaying Visitors Counter on Default Page

After completing this module, students will be able to:

- Describe state management.
- Describe Microsoft ASP.NET Profiles.
- Describe ASP.NET Caching.

Module 14: Configuring and Deploying a Microsoft ASP.NET Web Application

This module explains how to configure and deploy a Microsoft ASP.NET Web application by using the machine.config and web.config files.

Lessons

- Configuring an ASP.NET Web Application
- Deploying an ASP.NET Web Application

Lab : Configuring and Deploying a Microsoft ASP.NET Web Application

- Configuring the List View Page Size and Enabling the Save Countries Button
- Configuring the Visitor Counter
- Deploying the Web Application

After completing this module, students will be able to:

- Configure an ASP.NET Web application.
- Deploy an ASP.NET Web application.

Module 15: Securing a Microsoft ASP.NET Web Application This module explains the various Web application security functionalities. It also covers information on the infrastructure to build and deploy various Web application security functionalities.

Lessons

- Overview of Web Application Security
- Declaratively Configuring Authentication and Authorization
- Working Programmatically with Authentication and Authorization

Lab : Securing a Microsoft ASP.NET Web Application

- Exercise 1: Enabling Forms Authentication
- Exercise 2: Implementing Authorization
- Exercise 3: Protecting Configuration File

After completing this module, students will be able to:

- Describe Web application security.
- Describe how to declaratively configure authentication and authorization.
- Work programmatically with authentication and authorization.

Module 16: Implementing Advanced Technologies Supported by Microsoft Visual Studio 2010 for Web Development This module describes the new Visual Studio 2010 and .NET Framework 4 functionalities, changes, and enhancements for improved Web development. The module also covers how Microsoft ASP.NET MVC 2 and Microsoft Silverlight 4 fit in with .NET Framework 4 and Visual Studio 2010

Lessons

- Working with the ASP.NET MVC 2 Framework
- Working with Silverlight 4

Lab : Implementing Advanced Technologies Supported by Microsoft Visual Studio 2010 for Web Development

- Exercise: Implementing a Silverlight Application

After completing this module, students will be able to:

- Work with ASP.NET MVC 2.
- Work with Silverlight 4.