Course 2310D: Developing Web Applications Using Microsoft Visual Studio 2008 SP1

About this Course
This five-day instructor-led course provides knowledge and skills on developing Web applications by using Microsoft Visual Studio 2008 SP1.

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 ability to construct a simple Web page using a Microsoft tool or a third-party tool. For example, students should be able to 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 2008 SP1.
- Create Web applications by using Microsoft Visual Studio 2008 SP1 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 XML Web services 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 2008 SP1 for Web development.

Prerequisites
Before attending this course, students must have:
- Knowledge of HTML or DHTML, including:
- Tables
- Images
- Forms
- Programming experience using Microsoft Visual Basic or Microsoft Visual C# , including:
    - Declaring variables
    - Using loops
    - Using conditional statements

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

Course Outline

Module 1: Exploring ASP.NET Web Applications in Microsoft Visual Studio 2008 SP1

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

After completing this module, students will be able to:

- Describe the .NET Framework.
- Describe ASP.NET.
- Describe how the lab application works.

Module 2: Creating Web Applications by Using Microsoft Visual Studio 2008 SP1 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 2008 SP1. It also explains how to create a simple Web application.

Lessons

- Choosing a Programming Language
- Overview of Visual Studio 2008 SP1
- Creating a Simple Web Application

Lab: Creating Web Applications by Using Microsoft Visual Studio 2008 SP1 and Microsoft .NET–Based Languages

- Creating an ASP.NET Web Site
- Adding and Configuring Server Controls in Web Forms
- Building and Deploying an ASP.NET Web Application

After completing this module, students will be able to:

- Choose a programming language.
- Describe Visual Studio 2008 SP1.
- 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

- Creating a Web Form
- 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 2008 SP1
- Handling Page Events

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

- Implementing Code in a Web Application
- Creating Event Procedures
- Creating an Entity Component
- 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 Visual Studio 2008 SP1.
- 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

- Adding and Applying a Master Page
- 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 an 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

- Adding Validation Controls
- Configuring Validation Controls
- Adding Server-Side Validation

After completing this module, students will be able to:

- Describe user input validation.
- Describe Visual Studio 2008 SP1.
- Create a simple Web application.

Module 7: Debugging 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

- Debugging a Web Application
- Tracing a Web Application

After completing this module, students will be able to:

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

Module 8: Managing Data in an ASP.NET 3.5 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 3.5 Web Application

- Connecting to a Data Source
- Binding a Server Control to a Data Source
- 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

Lab: Managing Data Access Tasks by Using LINQ

- Loading Data by Using the XmlDataSource Control
- Displaying Data by Using LINQ to XML
- Saving Data by Using LINQ to SQL

After completing this module, students will be able to:

- Describe LINQ.
- Manage XML data by using LINQ to XML.
- Manage SQL data by using LINQ to SQL.

Module 10: Managing Data by Using 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

- Adding Dynamic Data to an Existing Web Site
- Registering LINQ to SQL with Dynamic Data
- Adding Metadata to the Data Model

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 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 ASP.NET AJAX
- Creating an ASP.NET AJAX Application by Using the ASP.NET AJAX Extensions
- Extending an Application by Using the ASP.NET AJAX Control Toolkit

Lab: Creating a Microsoft ASP.NET AJAX Application

- Creating a Modal About Box
- Customizing Dynamic Data Field Templates with AJAX Controls
- 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 XML Web Services and Windows Communication Foundation Services

This module provides an overview of XML Web services. It describes how to locate and call an XML Web service directly by using a browser and a proxy from a Web application. 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 XML Web Services
- Locating XML Web Services
- Calling XML Web Services
- Consuming Windows Communication Foundation Services

Lab: Consuming XML Web Services and Windows Communication Foundation Services

- Discovering an XML Web Service
- Creating a Web Reference Proxy
- Calling a Web Service Method from a Web Form

After completing this module, students will be able to:

- Describe XML Web services.
- Locate XML Web services.
- Call XML Web 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

- Examining the View State
- Caching Countries
- Displaying Visitors Counter on Default Page

After completing this module, students will be able to:

- Describe state management.
- Describe 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

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

Lab: Securing a Microsoft ASP.NET Web Application

- Enabling Forms Authentication
- Implementing Authorization
- Protecting the 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 New Technologies Supported by Visual Studio 2008 SP1 for Web Development

This module explains the various new functionality, changes, and enhancements of Microsoft Visual Studio 2008 SP1 and Microsoft .NET Framework 3.5 SP1 for improved Web development. In addition, it explains how Microsoft ADO.NET Data Services, Microsoft ASP.NET MVC, and Microsoft Silverlight 3 fit in with the .NET Framework 3.5 SP1 and Visual Studio 2008 SP1.

Lessons

- Working with ADO.NET Data Services
- Working with ASP.NET MVC
- Working with Silverlight 3

Lab : Implementing New Technologies Supported by Visual Studio 2008 SP1 for Web Development

- Implementing ADO.NET Data Services
- Implementing Silverlight Applications

After completing this module, students will be able to:

- Work with ADO.NET Data Services.
- Work with ASP.NET MVC.
- Work with Silverlight 3.