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## Developing Web Applications with Microsoft Visual Studio 2010

**Duration: 5 Days    Course Code: M10264**

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### Overview:

In this course, students will learn to develop advanced ASP.NET MVC and Web Forms applications using .NET Framework 4 tools and technologies. The focus will be on coding activities that enhance the performance and scalability of the Web site application. ASP.NET MVC will be introduced and compared with Web Forms so that students know when each should/could be used. This will also prepare the student for exam 70-515.

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### Target Audience:

This course is intended for professional Web developers who use Microsoft Visual Studio in a team-based, medium-sized to large development environment. Members of the audience have a minimum of two to three years of experience developing Web-based applications by using Microsoft Visual Studio and Microsoft ASP.NET. Members of the audience are experienced users of Microsoft Visual Studio 2008 SP1 and newer releases of the Visual Studio product. The audience understands how to use the new features of Visual Studio 2010.

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### Objectives:

- After completing this course, students will be able to:
  - Describe the underlying architecture and design of a Web application.
  - Apply best practices and make appropriate trade-offs based on business requirements when designing a Web application.
  - Develop MVC models.
  - Develop MVC controllers.
  - Develop MVC views.
  - Optimize the design of a Web application for discoverability by search engines.
  - Write server-side code for Web Forms.
  - Optimize data management for Web Forms.
  - Ensure quality by debugging, unit testing, and refactoring.
  - Secure a Web application.
  - Apply Master Pages and CSS for a consistent application UI.
  - Develop client-side scripts and services for a responsive, rich, and interactive UI.
  - Implement advanced AJAX in a Web application.
  - Deploy a Web application.
  - Develop a Web application by using Silverlight.
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### Prerequisites:

In addition to their professional Web development experience, students who attend this training should have the following technical knowledge:

An understanding of the problem-solving techniques that apply to software development, including the following principles of software development:

- modern software development model
- typical phases of a software development lifecycle
- concepts of event-driven programming
- concepts of object-oriented programming
- creating use-case diagrams
- designing and building a user interface
- developing a structured application

A basic understanding of the following scripting techniques and some hands-on experience writing scripts:

- Web scripting techniques

- Macro scripting techniques

Windows scripting techniquesA general understanding of the purpose, function, and features of following .NET Framework topics:

- Common Language Runtime

- .NET Framework class library

- Common Type System

- Component interoperation

- Cross-Language Interoperability

- Assemblies in the Common Language Runtime

- Application Domains

- Runtime hosts supported by the .NET Framework

Experience using Visual Studio 2008 in the following task areas:

- Declaring and initializing typed variables using the Camel case naming convention

- Using arithmetic, relational, and logical operators in code statements

- Using branching statements to control code execution

- Using looping statements to iterate through collections or repeat steps until a specified condition is met

- Creating classes and methods to establish the basic structure of an application

- Using methods and events to implement the programming logic of an application

- Identifying syntax and logic errors

- Accessing and managing data from a data source

Experience in object oriented design and development as follows:

- Creating and accessing classes and class properties

- Creating and accessing methods and overloaded methods

- Implementing inheritance, base classes, and abstract classes

- Declaring, raising, and handling events

- Responding to and throwing exceptions

- Implementing interfaces and polymorphism

- Implementing shared and static members

- Implementing generics

- Creating components and class libraries

## Content:

### Module 1: Overview of Web Application Design

- This module describes the underlying architecture and design of a Web application

#### Lessons

- Overview of IIS 7.0
- Overview of ASP.NET 4.0
- Introduction to the MVC Framework
- Overview of the Request Life Cycle
- Web Applications: Case Studies
- Web Application Design Essentials
- Guidelines for Determining When to Use Web Forms and MVC
- Visual Studio 2010 Tools and Technologies for Web Application Design
- Exploring Ways to Create MVC Models
- Creating a Data Repository
- Implementing MVC Controllers
- Creating Action Methods
- Implementing MVC Views
- Implementing Strongly-Typed MVC Views
- Implementing Partial MVC Views
- Overview of Search Engine Optimization
- Creating the Robots and Sitemap Files
- Using ASP.NET Routing
- Overview of the Structure of a Web Application
- Controlling ViewState
- Localizing a Web Application
- Persisting Data on a Web Forms Page
- Validating User Input
- Managing Data by Using LINQ to Entities
- Using Data Source Controls
- Using ASP.NET Dynamic Data
- Debugging and Refactoring Code
- Unit Testing Code
- Processing Unhandled Exceptions
- Test Driven Development
- Configuring Authentication
- Configuring ASP.NET Membership
- Managing Authorization by Using ASP.NET Roles
- Applying Master Pages
- Applying CSS, Skins, and Themes
- Developing Client-Side Scripts
- Implementing AJAX
- Creating Services
- Implementing Ajax in ASP.NET MVC Pages Using Microsoft Ajax
- Implementing Ajax in ASP.NET MVC Pages Using jQuery
- Working With jQuery and Ajax Events
- Overview of Web Application Deployments
- Overview of Web Site Deployments
- Deploying AdventureWorks
- Introduction to Rich Internet Applications
- Overview of Silverlight
- Creating a Silverlight Application

### Module 2: Designing a Web Application

- This module describes the best practices

### Module 6: Designing for Discoverability

- This module describes how to implement the navigational design and also how discoverability will be achieved through content keywords and page URLs.

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### Module 11: Applying Master Pages and CSS

- This module describes how to achieve a consistent UI in a reusable manner.

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### Module 12: Developing Client Side Scripts and Services

and trade-offs that you need to make when designing a Web application.

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#### Module 3: Developing MVC Models

- This module describes the MVC development model (Models, Controllers, and Views) and how to create the Models that are used to access and modify the data in a data source.

#### Module 7: Writing Server-Side Code for Web Forms

- This module describes the advanced features of server-side coding and technologies. The module describes how to allow the website to move into a global and web farm environment through localization, shared sessions, and custom

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- This module described how to develop client-side scripts and services for a responsive, rich, and interactive application UI.

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#### Module 13: Implementing Advanced AJAX in a Web Application

- This module describes the programmatic side of AJAX enabled controls (as well as

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## Module 4: Developing MVC Controllers

- This module describes how to create the Controllers that are used to respond to communications from the user and how to implement the application flow and logic.

## Lessons

## ■ Creating a Silverlight Application

## Module 8: Optimizing Data Management for Web Forms

- This module describes how to optimize and display data management tasks for a Web Forms-based application using Dynamic Data, Data Binding, LinqToEntities, server side controls, and server-side code.

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extending server controls to include AJAX functionality) on a Web Forms page as well as implementing AJAX on a MVC page

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## Module 14: Deploying a Web Application

- This module describes how to plan, configure, and perform deployment tasks associated with a production Web site.



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#### Module 5: Developing MVC Views

- This module describes how to create the Views that are used to expose the application UI. The module also covers how to manage pre-action and post-action behavior of Controller action methods using the included action filters a

#### Lessons

- Overview of IIS 7.0

- Overview of Silverlight
- Creating a Silverlight Application

#### Module 9: Ensuring Quality by Debugging, Unit Testing, and Refactoring

- This module describes how to perform check-in testing for their Web Forms and MVC applications as well as how to use the built-in debugging capabilities of VS2010.

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The module also describes the Web site lifecycle as it pertains to deployment.

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#### Module 15: Developing a Web Application by Using Silverlight

- This module introduce students to Silverlight by having them integrate a Silverlight module into an existing ASP.NET application. Students will learn

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#### Module 10: Securing a Web Application

- This module describes how to mitigate common security threats and to implement the essentials (must haves) of Web security in both MVC and Web Forms applications.

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how to add a Silverlight project to an existing solution, leverage the existi

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- Configuring ASP.NET Membership
- Managing Authorization by Using ASP.NET Roles
- Applying Master Pages
- Applying CSS, Skins, and Themes
- Developing Client-Side Scripts
- Implementing AJAX
- Creating Services
- Implementing Ajax in ASP.NET MVC Pages Using Microsoft Ajax
- Implementing Ajax in ASP.NET MVC Pages Using jQuery
- Working With jQuery and Ajax Events
- Overview of Web Application Deployments
- Overview of Web Site Deployments
- Deploying AdventureWorks
- Introduction to Rich Internet Applications
- Overview of Silverlight
- Creating a Silverlight Application

### Further Information:

For More information, or to book your course, please call us on 00 20 (0) 2 2269 1982 or 16142

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