
Programming in HTML5 with JavaScript and CSS3

Duration: 5 Days **Course Code: M20480**

Overview:

This course provides an introduction to HTML5, CSS3, and JavaScript. This course helps students gain basic HTML5/CSS3/JavaScript programming skills. This course is an entry point into both the Web application and Windows Store apps training paths. The course focuses on using HTML5/CSS3/JavaScript to implement programming logic, define and use variables, perform looping and branching, develop user interfaces, capture and validate user input, store data, and create well-structured application.

The lab scenarios in this course are selected to support and demonstrate the structure of various application scenarios. They are intended to focus on the principles and coding components/structures that are used to establish an HTML5 software application. This course uses Visual Studio 2012, running on Windows 8.

Target Audience:

This course is intended for professional developers who have 6-12 months of programming experience and who are interested in developing applications using HTML5 with JavaScript and CSS3 (either Windows Store apps for Windows 8 or web applications).

Objectives:

- Explain how to use Visual Studio 2012 to create and run a Web application.
 - Describe the new features of HTML5, and create and style HTML5 pages.
 - Add interactivity to an HTML5 page by using JavaScript.
 - Create HTML5 forms by using different input types, and validate user input by using HTML5 attributes and JavaScript code.
 - Send and receive data to and from a remote data source by using XMLHttpRequest objects and jQuery AJAX operations.
 - Style HTML5 pages by using CSS3.
 - Create well-structured and easily-maintainable JavaScript code.
 - Use common HTML5 APIs in interactive Web applications.
 - Create Web applications that support offline operations.
 - Create HTML5 Web pages that can adapt to different devices and form factors.
 - Add advanced graphics to an HTML5 page by using Canvas elements, and by using and Scalable Vector Graphics.
 - Enhance the user experience by adding animations to an HTML5 page.
 - Use Web Sockets to send and receive data between a Web application and a server.
 - Improve the responsiveness of a Web application that performs long-running operations by using Web Worker processes.
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Prerequisites:

- **Understand the basic HTML document structure:**
 - How to use HTML tags to display text content.
 - How to use HTML tags to display graphics.
 - How to use HTML APIs.
 - Understand how to style common HTML elements using CSS, including:
 - How to separate presentation from content
 - How to manage content flow.
 - How to control the position of individual elements.
 - How to implement basic CSS styling.
 - Understand how to write JavaScript code to add functionality to a web page:
 - How to create and use variables
 - **How to use:**
 - arithmetic operators to perform arithmetic calculations involving one or more variables
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- relational operators to test the relationship between two variables or expressions
 - logical operators to combine expressions that contain relational operators
 - How to control the program flow by using if ... else statements.
 - How to implement iterations by using loops.
 - How to write simple functions.
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Content:

Module 1: Overview of HTML and CSS

- Overview of HTML
- Overview of CSS
- Creating a Web Application by Using Visual Studio 2012
- Lab : Exploring the Contoso Conference Application
- Walkthrough of the Contoso Conference Application
- Examining and Modifying the Contoso Conference Application

Module 2: Creating and Styling HTML5 Pages

- Creating an HTML5 Page
- Styling an HTML5 Page
- Lab : Creating and Styling HTML5 Pages
- Creating HTML5 Pages
- Styling HTML5 Pages

Module 3: Introduction to JavaScript

- Overview of JavaScript Syntax
- Programming the HTML DOM with JavaScript
- Introduction to jQuery
- Lab : Displaying Data and Handling Events by Using JavaScript
- Displaying Data Programmatically
- Handling Events

Module 4: Creating Forms to Collect Data and Validate User Input

- Overview of Forms and Input Types
- Validating User Input by Using HTML5 Attributes
- Validating User Input by Using JavaScript
- Lab : Creating a Form and Validating User Input
- Creating a Form and Validating User Input by Using HTML5 Attributes
- Validating User Input by Using JavaScript

Module 5: Communicating with a Remote Data Source

- Sending and Receiving Data by Using XMLHttpRequest
- Sending and Receiving Data by Using jQuery AJAX operations
- Lab : Communicating with a Remote Data Source
- Retrieving Data
- Serializing and Transmitting Data
- Refactoring the Code by Using jQuery ajax method

Module 6: Styling HTML5 by Using CSS3

- Styling Text
- Styling Block Elements
- CSS3 Selectors
- Enhancing Graphical Effects by Using CSS3
- Lab : Styling Text and Block Elements using CSS3
- Styling the Navigation Bar
- Styling the Page Header
- Styling the About Page

Module 7: Creating Objects and Methods by Using JavaScript

- Writing Well-Structured JavaScript
- Creating Custom Objects
- Extending Objects
- Lab : Refining Code for Maintainability and Extensibility
- Inheriting From Objects
- Refactoring Code to Use Objects

Module 8: Creating Interactive Pages using HTML5 APIs

- Interacting with Files
- Incorporating Multimedia
- Reacting to Browser Location and Context
- Debugging and Profiling a Web Application
- Lab : Creating Interactive Pages by Using HTML5 APIs
- Incorporating Video
- Incorporating Images
- Using the Geolocation API

Module 9: Adding Offline Support to Web Applications

- Reading and Writing Data Locally
- Adding Offline Support by Using the Application Cache
- Lab : Adding Offline Support to a Web Application
- Implementing the Application Cache
- Implementing Local Storage

Module 10: Implementing an Adaptive User Interface

- Supporting Multiple Form Factors
- Creating an Adaptive User Interface
- Lab : Implementing an Adaptive User Interface
- Creating a Print-Friendly Stylesheet
- Adapting Page Layout To Fit a Different Form Factor

Module 11: Creating Advanced Graphics

- Creating Interactive Graphics by Using Scalable Vector Graphics
- Programmatically Drawing Graphics by Using a Canvas
- Lab : Creating Advanced Graphics
- Creating an Interactive Venue Map by Using Scalable Vector Graphics
- Creating a Speaker Badge by Using a Canvas Element

Module 12: Animating the User Interface

- Applying CSS Transitions
- Transforming Elements
- Applying CSS Key-frame Animations
- Lab : Animating User Interface Elements
- Applying Transitions to User Interface Elements
- Applying Key-Frame Animations

Module 13: Implementing Real-Time Communications by Using Web Sockets

- Introduction to Web Sockets
- Sending and Receiving Data by Using Web Sockets
- Lab : Implementing Real-Time Communications by Using Web Sockets
- Receiving Data from Web Socket
- Sending Data to a Web Socket
- Sending Multiple Types of Messages To or From a Web Socket

Module 14: Creating a Web Worker Process

- Introduction to Web Workers
- Performing Asynchronous Processing by Using a Web Worker
- Lab : Creating a Web Worker Process
- Improving Responsiveness by Using a Web Worker

Further Information:

For More information, or to book your course, please call us on 00 966 92000 9278

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