20480 Programming in HTML5 with JavaScript and CSS3

This course provides an introduction to HTML5, CSS3, and JavaScript. This course helps students gain basic HTML5/CSS3/JavaScript programming skills.

**Length Days: 5 | Length Hours: 40**

**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).

**Course Objectives**
After completing this course, students will be able to:

- 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.
Course Outline

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

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

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

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

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

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

7 - Creating Objects and Methods by Using JavaScript
   • Writing Well-Structured JavaScript
   • Creating Custom Objects
   • Extending Objects
   • Lab : Refining Code for Maintainability and Extensibility
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

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

10 - Implementing an Adaptive User Interface
- Supporting Multiple Form Factors
- Creating an Adaptive User Interface
- Lab : Implementing an Adaptive User Interface

11 - Creating Advanced Graphics
- Creating Interactive Graphics by Using Scalable Vector Graphics
- Programmatically Drawing Graphics by Using a Canvas
- Lab : Creating Advanced Graphics

12 - Animating the User Interface
- Applying CSS Transitions
- Transforming Elements
- Applying CSS Key-frame Animations
- Lab : Animating User Interface Elements

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

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