



## Course Content

### Course Description:

In the Programming in HTML5 with JavaScript and CSS3 course, students are provided with 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 applications.

### Prerequisites:

The course is intended for developers who have at least six months of professional experience and who are interested in developing applications using HTML5 with JavaScript and CSS3 (either Windows Store apps or IE10 apps for the Web). While the students may have little or no HTML5 coding experience, they should have some experience with HTML4.

Students choosing to attend this course without a developer background should pay special attention to the training prerequisites. Developers who have more than 5 years programming experience may find that portions of this training are fundamental in nature when presenting the syntax associated with certain programming tasks.

Individuals who are interested in taking exam [70-480](#): Programming in HTML5 with JavaScript and CSS3, can also attend this course.

Before attending this course, students must have at least three months professional development experience.

In addition to their professional experience, students who attend this training should have a combination of practical and conceptual knowledge related to HTML5 programming. This includes the following prerequisites:

- Understand the basic HTML document structure:
- Use HTML tags to display text content.
- Use HTML tags to display graphics.
- Use HTML APIs.
- Understand how to style common HTML elements using CSS, including:
  - Separating presentation from content.
  - Managing content flow.
  - Managing positioning of individual elements.
  - Managing content overflow.
- Basic CSS styling.



# Programming in HTML5 with JavaScript and CSS3

Course ID#: 1411-750-12-W

35 Hrs

## Topics:

### Module 1: Overview of HTML and CSS

#### Lessons

- 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

#### Lessons

- 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

#### Lessons

- 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

#### Lessons

- 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

#### Lessons

- 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

#### Lessons

- Styling Text
- Styling Block Elements
- CSS3 Selectors
- Enhancing Graphical Effects by Using CSS3



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## 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

### Lessons

- 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

### Lessons

- 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

### Lessons

- 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

### Lessons

- 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

### Lessons

- 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

### Lessons

- Applying CSS Transitions
- Transforming Elements
- Applying CSS Key-frame Animations



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## 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

### Lessons

- 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

### Lessons

- 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
- Providing User Feedback During a Long-Running Process