

40 HORAS

## INTRODUCTION

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.

## 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). This course is intended for students who have the following experience:

- 1 – 3 months experience creating Web applications, including writing simple JavaScript code
- 1 month experience creating Windows client applications
- 1 month of experience using Visual Studio 2010 or 2012

This course is not intended for developers with three or more months of HTML5 coding experience.

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.

## AT COURSE COMPLETION

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.

## PREREQUISITES

Before attending this course, students must have:

- 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
    - 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.

## COURSE OUTLINE

### Module 1: Overview of HTML and CSS

- Overview of HTML
- Overview of CSS
- Creating a Web Application by Using Visual Studio 2012

### Module 2: Creating and Styling HTML5 Pages

- Creating an HTML5 Page
- Styling an HTML5 Page

### Module 3: Introduction to JavaScript

- Overview of JavaScript Syntax
- Programming the HTML DOM with JavaScript
- Introduction to jQuery

### 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

### Module 5: Communicating with a Remote Data Source

- Sending and Receiving Data by Using XMLHttpRequest
- Sending and Receiving Data by Using jQuery AJAX operations

### Module 6: Styling HTML5 by Using CSS3

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

### Module 7: Creating Objects and Methods by Using JavaScript

- Writing Well-Structured JavaScript
- Creating Custom Objects
- Extending 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

### Module 9: Adding Offline Support to Web Applications

- Reading and Writing Data Locally
- Adding Offline Support by Using the Application Cache

### Module 10: Implementing an Adaptive User Interface

- Supporting Multiple Form Factors
- Creating an Adaptive User Interface

### Module 11: Creating Advanced Graphics

- Creating Interactive Graphics by Using Scalable Vector Graphics
- Programmatically Drawing Graphics by Using a Canvas

### Module 12: Animating the User Interface

- Applying CSS Transitions
- Transforming Elements
- Applying CSS 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

### Module 14: Creating a Web Worker Process

- Introduction to Web Workers
- Performing Asynchronous Processing by Using a Web Worker