

# **Programming in HTML5 with JavaScript and CSS3**

## Course Outline

### **Module 1: Overview of HTML and CSS**

#### Lessons

- Overview of HTML
- Overview of CSS
- Creating a Web Application by Using Visual Studio 2017

#### Lab : Exploring the Contoso Conference Application

- Exploring the Contoso Conference Application
- Examining and Modifying the Contoso Conference Application

### **Module 2: Creating and Styling HTML**

#### Lessons

- Creating an HTML5 Page
- Styling an HTML5 Page

#### Lab : Creating and Styling HTML5 Pages

- Creating HTML5 Pages
- Styling HTML pages

### **Module 3: Introduction to JavaScript**

#### Lessons

- Overview of JavaScript
- Introduction to the Document Object Model

#### Lab : Displaying Data and Handling Events by Using JavaScript.

- Displaying Data Programmatically
- Handling Events

### **Module 4: Creating Forms to Collect and Validate User Input**

## Lessons

- Creating HTML5 Forms
- 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 Server**

### Lessons

- Async programming in JavaScript
- Sending and Receiving Data by Using the XMLHttpRequest Object
- Sending and Receiving Data by Using the Fetch API

## Lab : Communicating with a Remote Data Source

- Retrieving Data
- Serializing and Transmitting Data
- Refactoring the Code by Using the jQuery ajax Method

## **Module 6: Styling HTML5 by Using CSS3**

### Lessons

- Styling Text by Using CSS3
- Styling Block Elements
- Pseudo-Classes and Pseudo-Elements
- Enhancing Graphical Effects by Using CSS3

## Lab : Styling Text and Block Elements by Using CSS3

- Styling the Navigation Bar
- Styling the Register Link
- Styling the About Page

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

### Lessons

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

Lab : Refining Code for Maintainability and Extensibility

- Object Inheritance
- Refactoring JavaScript Code to Use Objects

## **Module 8: Creating Interactive Pages by 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 with HTML5 APIs

- Dragging and Dropping Images
- Incorporating Video
- Using the Geolocation API to Report the User's Current Location

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

Lessons

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

Lab : Adding Offline Support to Web Applications

- Caching Offline Data by Using the Application Cache API
- Persisting User Data by Using the Local Storage API

## **Module 10: Implementing an Adaptive User**

Lessons

- Supporting Multiple Form Factors
- Creating an Adaptive User Interface

Lab : Implementing an Adaptive User Interface

- Creating a Print-Friendly Style Sheet
- Adapting Page Layout to Fit Different Form Factors

## **Module 11: Creating Advanced Graphics**

## Lessons

- Creating Interactive Graphics by Using SVG
- Drawing Graphics by Using the Canvas API

## Lab : Creating Advanced Graphics

- Creating an Interactive Venue Map by Using SVG
- Creating a Speaker Badge by Using the Canvas API

## **Module 12: Animating the User Interface**

### Lessons

- Applying CSS Transitions
- Transforming Elements
- Applying CSS Keyframe Animations

## Lab : Animating the User Interface

- Applying CSS Transitions
- Applying Keyframe Animations

## **Module 13: Implementing Real-time Communication by Using Web Sockets**

### Lessons

- Introduction to Web Sockets
- Using the WebSocket API

## Lab : Performing Real-time Communication by Using Web Sockets

- Receiving Messages from a Web Socket
- Sending Messages to a Web Socket
- Handling Different Web Socket Message Types

## **Module 14: Performing Background Processing by Using Web Workers**

### Lessons

- Understanding Web Workers
- Performing Asynchronous Processing by Using Web Workers

## Lab : Creating a Web Worker Process

- Improving Responsiveness by Using a Web Worker

## **Module 15: Packaging JavaScript for Production Deployment**

- Lessons
- Understanding Transpilers And Module bundling
- Creating Separate Packages for Cross Browser Support

Lab : Setting Up Webpack Bundle for Production

- Creating and Deploying Packages using WebPack