

**Modern Web Development with HTML, CSS, and JavaScript**

**Course Number:** SCRPT-192  
**Duration:** 5 days

**Overview**

Creating modern web applications demands a deep understanding of HTML, CSS, advanced JavaScript techniques, as well as at least one client-side framework like Angular, React, Vue, or Svelte.

This Web Development training course teaches attendees how to create web applications using well-formed HTML, concise and flexible CSS, and scalable and elegant JavaScript, preparing learners to subsequently master a client-side framework. This course uses modern techniques and practices that stretch even experienced developers but are still within the grasp of JavaScript novices.

**Prerequisites**

No prior experience is presumed.

**Materials**

All Web Development training attendees receive comprehensive courseware.

**Software Needed on Each Student PC**

* Google Chrome
* Other modern browsers as desired
* IDE/development environment of your choice
* Other free software and lab files that Accelebrate would specify

**Objectives**

* Create web pages and websites using HTML5 and CSS3
* Debug HTML, CSS, and JavaScript
* Expertly apply styles with the advanced CSS3 selectors, including pseudo-elements and pseudo-classes
* Compare and contrast flexbox and grid and know when to use each
* Use HTML5 semantic tags like <main>, <section>, <header>, <article> and more
* Lay out pages using CSS flexbox and grids
* Write well-organized and properly structured JavaScript modules
* Handle multi-threading in JavaScript with promises and async/await
* Consume a RESTful API with Ajax using the fetch API

**Outline**

* Course Intro
* The Secrets of Web Development
  + Architecture of the web
  + How the W3C works
  + How to exploit modern browser capabilities
* Perfect Page Setup
  + The proper structure of HTML
  + The most critical elements
  + SMS, phone calls, and emails from pages
* JavaScript Quickstart
  + Just enough JavaScript to write a program (if, while, for, comments)
* How to Control the DOM
  + What is the DOM?
  + Querying the DOM
  + Wiring up raw event handlers
  + Altering the DOM for dynamic views
  + So who needs Angular, React, Vue?
* Debugging Tools
  + Node inspector
  + On-the-fly HTML/CSS changes
  + Inspecting HTTP packets
  + Emulating phones and tablets
* Operators
  + Arithmetic
  + Auto-operators
  + Logical operators
  + Truthy and falsey
  + Short-circuiting
* Variables
  + let, var, and const: when to use each
  + How hoisting works
  + Destructuring
  + Easy string templates with `${}`
* Arrays in JavaScript
  + Iterating arrays
  + for-in vs. for-of
  + How to spread arrays
  + Array.prototype.\*
  + map()
  + filter()
* Semantic Grouping
  + Why use them?
  + Section, article, nav, aside
  + Header, footer, main
* Effective CSS Styling
  + Fundamental separation of concerns
  + Best practices on placing styles
  + Basic selectors
  + Selector specificity
  + !important, and why not to use it
* Positioning with CSS
  + Position: absolute vs. relative vs. fixed vs. static
  + The box model
  + The art of centering
* How to Layout Pages with CSS
  + Why tables are a fail
  + Floating divs
  + Display: inline-block
  + Flexbox layouts
  + Grid layouts
* Deep dive into Flexbox
  + How flex works
  + The two ways to think about flex
  + Wrapping flexbox
  + No-wrap flexbox
* Deep dive into Grids
  + How grid works
  + Lines, tracks, cells, and areas
  + Defining the grid
  + Placing elements in the grid
* Advanced CSS Selectors
  + Basic selectors reminder
  + Compound selectors
  + Relationship selectors
  + Attribute selectors
  + Pseudo-classes
  + :nth-child()
  + :not()
  + Pseudo-elements
* Functional JavaScript
  + Variadicity
  + Function statements
  + Function expressions
  + Arrow functions
  + Default parameters
* Object-oriented JavaScript
  + Functional JavaScript vs. object-oriented JavaScript - Which should I choose?
  + How prototypal inheritance is different from traditional inheritance
  + Classes
  + Constructors
  + get() and set()
  + Classless objects
* Modules with JavaScript
  + requireJS
  + import
  + export vs. export default
  + IIFEs
* Asynchronous JavaScript
  + Multithreading
  + How the event loop works
  + Promises
  + Async and await
* Ajax
  + Making RESTful calls
  + JSON.stringify() and parse()
  + The fetch API
* Deep Dive into Tables (time-permitting)
  + The legal structure of tables
  + Spanning
  + Styling techniques
* Best Practices with Forms (time-permitting)
  + A complete form tag
  + The most useful inputs
  + Selects
  + Configuring the soft keyboard
  + How to write declarative data validations
* Conclusion