

55320: Programming with HTML, CSS, and JavaScript – 40 classes

This instructor-led is intended for IT professionals interested in becoming client-side web developers. who need to get a jump start on all three technologies. The course includes more than 30 exercises, providing a rapid hands-on introduction to the three major client-side languages: HTML, CSS, and JavaScript. Students should be prepared to cover a lot of ground quickly.

Audience Profile

This course is intended for students new to computer programming or experienced programmers who are new to client-side web development.

At Course Completion

- Describe the technologies involved in web development.
- Create HTML pages with links and images.
- Explain the benefits of CSS.
- Style HTML pages with CSS.
- Explain the concepts of objects, methods, and properties.
- Work with JavaScript variables.
- Create their own custom functions in JavaScript.
- Write flow control logic in JavaScript.
- Write JavaScript code that listens for and handles events, such as mouse clicks and page loads.
- Create forms with HTML and validate them with JavaScript.
- Use regular expressions in JavaScript for advanced form validation.

Course Details

Module 1: A Quick Overview of Web Development

This module gives an overview of the client-side and server-side technologies used in web development.

Lessons

- HTML is Part of a Team
- Client-side Programming
- Server-side Programming
- Web Development Technologies

Module 2: Introduction to HTML

This module explains the syntax and structure of HTML documents and provides a short history of HTML.

Lessons

- Exercise: A Simple HTML Document
- Getting Started with a Simple HTML Document
- HTML Elements, Attributes, and Comments
- The HTML Skeleton
- Viewing the Page Source
- Special Characters
- HTML Elements and Special Characters
- History of HTML
- The lang Attribute

Module 3: Paragraphs, Headings, and Text

This module explains how to add paragraphs, headings, and inline text to HTML pages.

Lessons

- Paragraphs
- Heading Levels
- Breaks and Horizontal Rules
- Exercise: Paragraphs, Headings, and Text
- The div Tag
- Creating an HTML Page
- Quoted Text
- Preformatted Text
- Inline Semantic Elements
- Exercise: Adding Inline Elements

Lab 1: Exercises included throughout lesson

- Creating an HTML Page
- Adding Inline Elements

Module 4: HTML Links

This module explains the difference between absolute and relative paths and shows how to add links to external HTML pages and to locations within a page. It also shows how to create email links.

Lessons

- Links Introduction
- Text Links
- Absolute vs. Relative Paths
- Targeting New Tabs
- Email Links
- Exercise: Adding Links
- Lorem Ipsum
- The title Attribute
- Linking to a Specific Location on the Page
- Targeting a Specific Location on the Page

Module 5: HTML Images

This module explains how to add images to a page, how to make those images accessible, and how to create image links.

Lessons

- Inserting Images
- Image Links
- Adding Images to the Document
- Exercise: Adding Images to the Page
- Providing Alternative Images

Module 6: HTML Lists

This module explains how to add ordered, unordered, and definition lists to HTML pages.

Lessons

- Unordered Lists
- Ordered Lists
- Definition Lists
- Exercise: Creating Lists

Module 7: Crash Course in CSS

This module provides a rapid introduction to CSS, explaining the benefits of using CSS to style HTML pages and describing the different ways to add CSS styles to HTML pages and elements.

Lessons

- Benefits of Cascading Style Sheets
- CSS Rules

- Selectors
- Combinators
- Precedence of Selectors
- How Browsers Style Pages
- CSS Resets
- CSS Normalizers
- External Stylesheets, Embedded Stylesheets, and Inline Styles
- Exercise: Creating an External Stylesheet
- Exercise: Creating an Embedded Stylesheet
- Exercise: Adding Inline Styles
- div and span
- Exercise: Styling div and span
- Media Types
- Units of Measurement
- Inheritance

Module 8: CSS Fonts

This module explains how to make text bold and italic and how to control other font attributes with CSS.

Lessons

- font-family
- @font-face
- font-size
- font-style
- font-variant
- font-weight
- line-height
- font shorthand
- Exercise: Styling Fonts

Module 9: Color and Opacity

This module explains how to control the color and opacity of elements on an HTML page.

Lessons

- About Color and Opacity
- Color and Opacity Values
- color
- opacity
- Exercise: Adding Color and Opacity to Text

Module 10: CSS Text

This module explains how to align, underline, cross out, and space letters and words, how to indent text, how to control whitespace, and how to add shadows to text.

Lessons

- letter-spacing
- text-align
- text-decoration
- text-indent
- text-shadow
- text-transform
- white-space
- word-break
- word-spacing
- Exercise: Text Properties

Module 11: JavaScript Basics

This module provides an introduction to the HTML Document Object Model and to JavaScript, its purpose, its syntax, and its structure.

Lessons

- JavaScript vs. EcmaScript
- The HTML DOM
- JavaScript Syntax
- Accessing Elements
- Where Is JavaScript Code Written?
- JavaScript Objects, Methods, and Properties
- Exercise: Alerts, Writing, and Changing Background Color

Module 12: Variables, Arrays, and Operators

This module explains how to create and use JavaScript variables and arrays, and introduces JavaScript operators.

Lessons

- JavaScript Variables
- A Loosely Typed Language
- Google Chrome DevTools
- Storing User-Entered Data

- Exercise: Using Variables
- Constants
- Arrays
- Exercise: Working with Arrays
- Associative Arrays
- Playing with Array Methods
- JavaScript Operators
- The Modulus Operator
- Playing with Operators
- The Default Operator
- Exercise: Working with Operators

Module 13: JavaScript Functions

This module explains how to use built-in JavaScript functions and how to write your own user-defined functions.

Lessons

- Global Objects and Functions
- Exercise: Working with Global Functions
- User-defined Functions
- Exercise: Writing a JavaScript Function
- Returning Values from Functions

Module 14: Built-In JavaScript Objects

This module covers the built-in JavaScript objects and shows how to create helper functions to provide additional functionality.

Lessons

- Strings
- Math
- Date
- Helper Functions
- Exercise: Returning the Day of the Week as a String

Module 15: Conditionals and Loops

This module explains flow control. It covers the different types of conditionals and loops in JavaScript.

Lessons

- Conditionals
- Short-circuiting
- Switch / Case
- Ternary Operator
- Truthy and Falsy
- Exercise: Conditional Processing
- Loops
- while and do...while Loops
- for Loops
- break and continue
- Exercise: Working with Loops
- Array: forEach()

Module 16: Event Handlers and Listeners

This module explains how to capture and respond to events such as mouse clicks and keyboard actions. It also explains how to create timers in JavaScript.

Lessons

- On-event Handlers
- Exercise: Using On-event Handlers
- The `addEventListener()` Method
- Anonymous Functions
- Capturing Key Events
- Exercise: Adding Event Listeners
- Benefits of Event Listeners
- Timers
- Typing Test

Module 17: The HTML Document Object Model

This module dives deep into the HTML Document Object Model, explaining the many ways of accessing elements on the page and showing how to dynamically add and remove elements with JavaScript.

Lessons

- CSS Selectors
- The `innerHTML` Property
- Nodes, NodeLists, and HTMLCollections
- Accessing Element Nodes
- Exercise: Accessing Elements
- Dot Notation and Square Bracket Notation

- Accessing Elements Hierarchically
- Exercise: Working with Hierarchical Elements
- Accessing Attributes
- Creating New Nodes
- Focusing on a Field
- Shopping List Application
- Exercise: Logging
- Exercise: Adding EventListeners
- Exercise: Adding Items to the List
- Exercise: Dynamically Adding Remove Buttons to the List Items
- Exercise: Removing List Items
- Exercise: Preventing Duplicates and Zero-length Product Names
- Manipulating Tables

Module 18: HTML Forms

This module explains how to create HTML forms.

Lessons

- How HTML Forms Work
- The form Element
- Form Elements
- Buttons
- Exercise: Creating a Registration Form
- Checkboxes
- Radio Buttons
- Exercise: Adding Checkboxes and Radio Buttons
- Fieldsets
- Select Menus
- Textareas
- Exercise: Adding a Select Menu and a Textarea
- HTML Forms and CSS

Module 19: JavaScript Form Validation

This module explains how to validate HTML forms with HTML attributes and with JavaScript.

Lessons

- Server-side Form Validation
- HTML Form Validation
- Accessing Form Data
- Form Validation with JavaScript

- Exercise: Checking the Validity of the Email and URL Fields
- Checking Validity on Input and Submit Events
- Adding Error Messages
- Validating Textareas
- Validating Checkboxes
- Validating Radio Buttons
- Validating Select Menus
- Exercise: Validating the Ice Cream Order Form
- Giving the User a Chance

Module 20: Regular Expressions

This module covers regular expressions and explains how to use them for advanced HTML form validation and to clean up form entries.

Lessons

- Getting Started
- Regular Expression Syntax
- Backreferences
- Form Validation with Regular Expressions
- Cleaning Up Form Entries
- Exercise: Cleaning Up Form Entries
- A Slightly More Complex Example