

55320: Programming with HTML, CSS and Javascript (5 Days)

Programming with HTML, CSS, and JavaScript is the Community Courseware equivalent of retired MOC 20480C Programming in HTML5 with JavaScript and CSS3. This five-day 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.

Like that course, this course focuses on using HTML, CSS, and JavaScript to develop web pages, implement programming logic, define and use variables, perform looping and branching, capture and validate user input, store data, and create well-structured applications.

Skills Gained

- 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.

Who Can Benefit

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

Prerequisites

- Basic computer and typing skills.

Course Outline

Module 1: A Quick Overview of Web Development

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

Module 2: Introduction to HTML

- 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
 - Lab 1: Getting Started
- A Simple HTML Document

Module 3: Paragraphs, Headings, and Text

- 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

- 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
Lab 1: Exercises included throughout lesson
- Adding Links

Module 5: HTML Images

- Inserting Images
- Image Links
- Adding Images to the Document
- Exercise: Adding Images to the Page
- Providing Alternative Images
Lab 1: Exercises included throughout lesson
- Adding Images to the Page

Module 6: HTML Lists

- Unordered Lists
- Ordered Lists
- Definition Lists
- Exercise: Creating Lists
Lab 1: Exercises included throughout lesson
- Creating Lists

Module 7: Crash Course in CSS

- 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
- Lab 1: Exercises included throughout lesson
- Creating an External Stylesheet
- Creating an Embedded Stylesheet
- Adding Inline Styles
- Styling div and span Elements

Module 8: CSS Fonts

- font-family
- @font-face
- font-size
- font-style
- font-variant
- font-weight
- line-height
- font shorthand
- Exercise: Styling Fonts
- Lab 1: Exercises included throughout lesson
- Styling Fonts

Module 9: Color and Opacity

- About Color and Opacity
- Color and Opacity Values
- color
- opacity
- Exercise: Adding Color and Opacity to Text
- Lab 1: Exercises included throughout lesson
- Adding Color and Opacity to the Text

Module 10: CSS Text

- letter-spacing
- text-align
- text-decoration
- text-indent
- text-shadow
- text-transform
- white-space

- word-break
- word-spacing
- Exercise: Text Properties
Lab 1: Exercises included throughout lesson
- Text Properties

Module 11: JavaScript Basics

- 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
Lab 1: Exercises included throughout lesson
- Alerts, Writing, and Changing Background Color

Module 12: Variables, Arrays, and Operators

- 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
Lab 1: Exercises included throughout lesson
- Working with Arrays
- Working with Operators

Module 13: JavaScript Functions

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

Lab 1: Exercises included throughout lesson

- Working with Global Functions
- Writing a JavaScript Function

Module 14: Built-In JavaScript Objects

- Strings
- Math
- Date
- Helper Functions
- Exercise: Returning the Day of the Week as a String
Lab 1: Exercises included throughout lesson
- Returning the Day of the Week as a String

Module 15: Conditionals and Loops

- Conditionals
- Short-circuiting
- Switch / Case
- Ternary Operator
- Truthy and Falsy
- Exercise: Conditional Processing
- Loops
- while and dowhile Loops
- for Loops
- break and continue
- Exercise: Working with Loops
- Array: forEach()
Lab 1: Exercises included throughout lesson
- Conditional Processing
- Working with Loops

Module 16: Event Handlers and Listeners

- On-event Handlers
- Exercise: Using On-event Handlers
- The addEventListener() Method
- Anonymous Functions
- Capturing Key Events
- Benefits of Event Listeners
- Timers
Lab 1: Exercises included throughout lesson
- Using On-event Handlers
- Adding Event Listeners
- Creating a Typing Test

Module 17: The HTML Document Object Model

- 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
 - Lab 1: Exercises included throughout lesson
- Accessing Elements
- Working with Hierarchical Elements
- Logging
- Adding EventListeners
- Adding Items to the List
- Dynamically Adding Remove Buttons to the List Items
- Removing List Items
- Preventing Duplicates and Zero-length Product Names

Module 18: HTML Forms

- 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
 - Lab 1: Exercises included throughout lesson
- Creating a Registration Form
- Adding Checkboxes and Radio Buttons
- Adding a Select Menu and a Textarea

Module 19: JavaScript Form Validation

- 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
 - Lab 1: Exercises included throughout lesson
- Checking the Validity of the Email and URL Fields
- Validating the Ice Cream Order Form

Module 20: Regular Expressions

- 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
- Lab 1: Exercises included throughout lesson
 - Cleaning up Form Entries