Coding Academy Curriculum Overview

<table>
<thead>
<tr>
<th></th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>HTML</td>
<td>Git, CSS</td>
<td>CSS</td>
<td>CSS</td>
<td>JS</td>
</tr>
<tr>
<td>Week 2</td>
<td>JS</td>
<td>JS</td>
<td>JS, Git</td>
<td>Mini Proj.</td>
<td>JS</td>
</tr>
<tr>
<td>Week 3</td>
<td>Projects</td>
<td>Projects</td>
<td>Projects</td>
<td>Projects</td>
<td>Projects</td>
</tr>
</tbody>
</table>

**Week 1:** We initially introduce students to the mechanics of the web with a description of what happens after they enter a URL into a browser. Where does that information go? How does the browser know what to display after a user makes a request? What information is transmitted to the browser? We reveal what’s under the hood and give the students the ability to analyze the HTML, CSS, and JavaScript contained in any website.

Next, students learn how to build their own web page using HTML. They add text, links, lists, and graphic elements on a page. Then, they incorporate CSS rules to change the styling of their page elements so that users can understand and use the information on their page more easily. Students learn modern CSS display tools such as flexbox and grid to make the site usable on a wide range of screen sizes — from large-screen monitors to smartphones (responsive design).

**Specific Topics:**

**The Web**
- The browser
- Web servers
- Hypertext Transfer Protocol (HTTP)
- Requests
- Introduction to HTML, CSS and JS
- The browser inspector
- Element Inspector (HTML and CSS)
- Source Inspector (JavaScript)
- VS Code Introduction

**HTML – Hypertext Markup Language**
- HTML Elements
- HTML document structure
- Document header
- Document body
- Body Elements
- Paragraphs
- Divs
- Headings
Unordered and ordered lists
Links – (Introduction to Attributes)
Horizontal rules
Sub and superscripts
Inputs
Header Elements
Title
Link
Incorporating Graphic Elements – local and remote
Scalable Vector Graphics (SVG)

Git
Command Line
Git Installation
Github
Working with Git in Teams
Merge Conflicts

CSS – Cascading Style Sheets
Intro to Cascading Style Sheets
Element style attributes
CSS syntax
Property/value style attribute pairs
Style tags
External style sheets
CSS properties
Text color
Color Systems
Named colors
Hexadecimal
RGB
Background Color
Height
Width
Fonts – family, size, style, and weight
The Box Model
Borders
Padding
Margin
Border radius
Backgrounds
Divs and Spans
Classes
Ids
Responsive Design
Float Property
CSS Display Properties
Week 2: In the second week, we work with JavaScript, a scripting language specifically designed for the web. Students learn variable types and the syntax of flow-control constructs such as conditional statements, program looping, and function calls. We explain how to put these code structures together to build clean, scalable code. Students learn to use JavaScript’s Document Object Model to manipulate a web page’s HTML and CSS to make dynamic, easy-to-use sites.

Specific Topics:

Intro to JavaScript
Script Tags
External Scripts
Document Object Model Elements and DOM methods
Events and Event Handlers
Mouse Events
Key Events
Input Events
this (self-referencing)
Variable Types
  Numbers and arithmetic operators
  Booleans and Boolean operators
  Strings and string methods
  Arrays and array methods
Defining and calling functions
Passing Parameters into functions
Returning values from functions
Calling functions using setInterval and setTimeout
SVG Animation
Flow Control
  If statements
  If else statements
  If else if statements
Week 3: In the final week of class, students flex their new coding muscles by assembling teams and creating web applications of their choosing. They gain practice with Git commands and GitHub repositories to facilitate collaborative code development under version control. They experience the give-and-take required for building an application with other programmers and how to break down and assign tasks efficiently. On the last day of class, each team presents its final working project.