# Foundations Objectives (Front-End Engineering)

| | Master Path | Objectives/Outcomes | | Lesson |
|---|---|---|---|---|
| 1 | HTML | a. Student can convert a sample of content (*e.g. article*) into semantic HTML5 markup | a. Skill | |
| 2 | Semantics | a. Student can define the term “semantics”<br>b. Student can apply the proper semantic (or non-semantic) tag to a content element | a. Knowledge<br>b. Skill | a. 1<br>b. 1 |
| 3 | Accessibility | a. Student can explain why coding for accessibility is important<br>b. Student can identify common accessibility strategies when producing HTML pages | a. Knowledge<br>b. Knowledge | a. 2<br>b. 2 |
| 4 | CSS | a. Given a sample of HTML and a visual mockup, student can use CSS to style the HTML to match the visual mockup | a. Skill | a. 1 |
| 5 | Selectors | a. Student can use tag, class selectors to apply styles to HTML content<br>b. Student can identify the appropriate use of tag and class selectors for styling content<br>c. Student can use child selectors for targeted styling of sequential content | a. Skill<br>b. Skill<br>c. Skill | a. 1.<br>b. 1<br>c. 2 |
| 6 | Type Families and Sizing | a. Student can apply font styles to elements such as size, color, family, style, and decoration. | a. Skill | a. 2 |
| 7 | Box Model | a. Student can explain the box model and how height/width, border, margin, and padding effect it.<br>b. Student can calculate “total” dimensions of an HTML element using the standard box model | a. Knowledge<br>b. Skill | a. 2<br>b. 2 |
| 8 | Layout and Floats | a. Student can explain what happens to elements when `float` is applied to it.<br>b. Student can use floats to arrange page elements into a column layout. | a. Knowledge<br>b. Skill | a. 3<br>b. 3 |
| 9 | Transitions | a. Student can apply transitions to state change events to animate the state change, e.g. Hover state of colors | a. Skill | a. 7 |
| 10 | Media Queries | a. Student can explain the concept of media queries and give example of why a media query should be applied to a styled | a. Knowledge<br>b. Skill | a. 7<br>b. 7 |

| | | | | |
|---|---|---|---|---|
| | | element, *e.g. Resizing fonts for mobile and desktop cases*<br>b. Student can write a min-width based media query that induces a state change for multiple screen sizes, *e.g. Resizing fonts for mobile and desktop cases* | | |
| 11 | JavaScript | a. Student can write simple JavaScript/jQuery programs that respond to user action and induce interface state changes*, e.g. tabbed navigation* | a. Skill | a. 5 |
| 12 | Operators | a. Student can identify the term “Operator”<br>b. Student can appropriately use:<br>- Assignment<br>- Equality<br>- Concatenation<br>- Math (+,-,/,*) | a. Knowledge<br>b. Skill | a. 4<br>b. 4 |
| 13 | Types | a. Student can list and explain the 5 primitives in JavaScript. | a. Knowledge | a. 4 |
| 14 | Expressions | a. Student can explain the components of an expression<br>b. Student can identify expressions present in an existing JavaScript program | a. Knowledge | a. 4 |
| 15 | Control Flow | a. Student can convert logical statements into algorithms using “if”, “if else” statements | a. Skill | a. 4 |
| 16 | Error Handling | a. Student can read and interpret common runtime errors in the console. | a. Skill | a. 4 |
| 17 | Developer Tools | a. Student can use “console.log” to help them develop and debug the state of their programs | a. Skill | a. 4 |
| 18 | Objects | a. Student can identify and create object literals<br>b. Students can access and edit object literal data using dot notation | a. Skill | a. 5<br>b. 5 |
| 19 | Arrays | a. Student can explain the phrase: “zero indexed” | a. Knowledge | a. 5 |
| 20 | Functions | a. Student can call existing functions that take parameters and return values to alter the state of a program. | a. Skill | a. 5 |
| 21 | Document Object Model | a. Student can explain the terms “DOM” and “Node”<br>b. Student can explain how the Document Object Model maps to HTML | a. Knowledge | a. 6<br>b. 6 |

| | | | | |
|---|---|---|---|---|
| 22 | Window Object | a. Student can explain how the Window object is connected to all JavaScript objects in an active web page | a. Knowledge | a. 6 |
| 23 | jQuery (Traversing, Manipulation) | a. Student can use jQuery to select elements of a page using the same CSS selectors listed in the CSS section<br>b. Students can use built in jQuery functions to edit the state of existing HTML elements | a. Skill | a. 6<br>b. 6 |

# FOUNDATIONS SCHEDULE

**Tooling:**

- **Google Chrome**
- **Atom**
- **Github Desktop**

**Note:** **Exercises Located Here**

1. **Session 1: 3 hours**
    a. Lecture Material
        i. Tooling (Atom, Github Desktop)
        ii. HTML Setup & Structure
        iii. Semantics/Non-semantic
        iv. CSS Setup & Structure
        v. CSS Selectors (tag & class)
    b. Instructor Led Exercises
    c. Homework
        i. Final Project: Part I
            1. Project Setup
            2. Creating HTML File
            3. Build the following HTML Elements
                a. Header
                b. Product Image Area
                c. Product Pricing/Description Area
                d. Footer
                e. Basic CSS (text, color etc)

d. Assessment?

2. **Session 2: 3 hours**
    a. Lecture Material
        i. Accessibility
        ii. Typography
        iii. Box Model
    b. Instructor Led Exercises
    c. Homework
        i. Final Project: Part II
            1. Build the following HTML Elements
                a. Tabbed Content Area
                b. Related Product Areas
            2. Adding more Font Styles, Colors
    d. Assessment

3. **Session 3: 3 hours**
    a. Lecture Material
        i. Layout and Floats
    b. Instructor Led Exercises
    c. Homework
        i. Final Project: Part III
            1. Laying Out Content
            2. All Elements should be in their proper place
    d. Assessment

4. **Session 4: 3 hours**
    a. Lecture Material
        i. Operators
        ii. Types
        iii. Expressions
        iv. Control Flow
        v. Error Handling
        vi. Developer Tools
    b. Instructor Led Exercises
    c. Homework
        i. Final Project: Part IV
            1. Take Home JavaScript Exercises
            2. Continue to work on HTML/CSS of project
    d. Assessment

5. **Session 5: 3 hours**
    a. Lecture Material

        i. Objects
        ii. Arrays
        iii. Functions
        iv. Window
    b. Instructor Led Exercises
    c. Homework
        i. Final Project: Part V
            1. Take Home JavaScript Exercises
            2. Continue to work on HTML/CSS of project
    d. Assessment

6. **Session 6: 3 hours**
    a. Lecture Material
        i. DOM
        ii. jQuery
    b. Instructor Led Exercises
    c. Homework
        i. Complete Final Project
            1. Add the JavaScript in place to make the tabbed navigation work.
            2. Finalized any HTML/CSS left to complete
        ii. Possibly, skip to final project?
    d. Assessment

7. **Session 7: 3 hours**
    a. Lecture Material
        i. mediaQueries (just discussion and examples, very short)
    b. Final Project Review
    c. Problem Solving
    d. Feedback
    e. Next Steps (Where do the go from here?)

# Lesson Template (Online Content)

- Our Project So Far
- What We'll Need To Figure Out Next (Problem + Learning Objectives)
- Introduce New Concepts
- Work New Skills Into Course Project
- The Solution So Far
- The Next Assignment
- Self Assessment?

# Final Project CSS property audit

--Ruby Array created by parsing the final project CSS file and counting every property and the frequency of appearance. Parser written by Mason.

[["background-color", 1],
["padding-left", 1],
["margin-bottom", 1],
["border-collapse", 1],
["border-bottom-color", 1],
["transition", 1],
["border-color", 1],
["height", 1],
["margin-left", 1],
["margin-right", 1],
["clear", 2],
["vertical-align", 2],
["box-shadow", 2],
["border-top", 2],
["cursor", 2],
["letter-spacing", 2],
["line-height", 2],
["border", 3],
["max-width", 3],
["text-decoration", 3],
["border-radius", 3],
["border-bottom", 3],
["text-align", 5],
["text-transform", 5],
["font-family", 8],
["display", 9],
["font-weight", 10],
["background", 11],

["width", 14],
["color", 16],
["font-size", 19],
["padding", 21],
["float", 21],
["margin", 27]]