



Course Code/Course Title:

## FSW101 Front End Foundations

**Course Description:** The Front End Foundations course is an extension of the Coding From Scratch module, further exploring advanced concepts. This course is intended to enable students to create modern and robust web applications without leveraging any advanced frameworks. Students will strengthen their foundational knowledge of how web applications and client-side coding works. Students will explore web animations, transitions, transformations and how to structure and organize code for a large web project.

**Course Length:**

40 hours

**Prerequisites:**

FSW100

**Proficiency Exam**

☐ Yes    ☒ No

**Course Start Date:**

**Meeting Days/Times**

**Course End Date:**

### **Required Resources:**

Online students are required to have a laptop or desktop computer with internet access. Minimum: PC (Windows) or MacBook laptop. 4GB ram, 256GB HD, Core i5

Recommended: PC (Windows) or MacBook laptop. 8GB ram, 256GB SSD, Core i5

It is required that you are able to download programming resources to your laptop/desktop

This will become your programming rig. Every student will need their own laptop. We will be downloading programming resources to your laptop, and it will also house your coding projects.

### **Additional Resources:**

Students are expected to supply notebooks, pens, pencils, highlighters, folders, ring binders, calculators, USB storage devices and other general supplies as needed to aid in the collection and storage of information in their courses.

- A. For Classes Delivered in an Online Format (for approved courses and campuses).** Online courses are delivered via <https://wozu.exeterlms.com> in an asynchronous format. Students enrolled in online courses/programs are expected to spend an equivalent amount of time on task, as campus-based students, in meeting course objectives. For Online Courses the total expected hours required for completion of course objectives are identified on the syllabus as **Total Contact Hours** and reflect the sum of theory, laboratory, and outside hours.

## Educational Objectives:

Upon successful completion of this Program, students will be able to:

1. Learn more advanced JavaScript including arrow functions and the spread operator
2. Learn about OO style JavaScript
3. Learn how to manipulate the DOM using JQuery
4. Learn how to make a responsive design using Bootstrap
5. Learn about FlexBox as an alternative to the box model

## Course Outline

### Lessons:

#### Week 1

1. **Introduction to Front End Foundations:** Includes Node install, npm packages, developer tools, and linking to external files
2. **More JS Concepts:** Includes const vs. let, data types, this keyword, operators, and spread operators
3. **Decision Making:** Includes arrow functions, switch statements, error handling, try catch throw, ternary operator

#### Week 2

4. **Object-Oriented Programming:** Includes classes, building a class, methods, get and set, instantiating, instances, and inheritance
5. **Introduction to Flexbox:** Includes Flexbox containers, flex items and grouping, flex alignment, flex container order, and flexible items
6. **Introduction to Bootstrap:** Includes grid system, tables, forms, buttons, icons, nav, navbar, and jumbotron
7. **Interacting With the DOM:** Includes creating DOM elements, DOM nodes, Regex, special characters, and using Regex in JavaScript

#### Week 3

8. **Introduction to jQuery:** Includes syntax, actions, and events
9. **AJAX:** Includes XMLHttpRequest, AJAX request, AJAX with callback, jQuery with AJAX, JSON, parsing JSON from an API, and GitHub API solutions
10. **Final Project**

### Outline:

- **L1 Practice Hands On:** Link your JavaScript file to your HTML file. Within the JavaScript file create a function using if statements which checks if the number 1 is greater than 100 or less than 0 and console.log's a message. Then check if number 2 is less than 20 or greater than 50 and console.log a separate message.
- **L2 Practice Hands On :** Create a JavaScript file that has an object named idealCar. Within the object add a name, color, and weightInPounds property and a method that takes each of the values and links them together when the function is called in a console.log.
- **L3 Hands On:** Create a switch..case statement that checks a student's grade level and assigns it the appropriate title. Next, convert the following if..else statement into a ternary from the function provided.
- **L4 Hands On:** Create three new subclasses that inherit from the Employee parent class and add methods to the noted subclasses. Each new subclass should use a constructor and the super method. Based on the methods, a console.log should provide specified sentences. Create a new instance of each subclass and call each of the methods that live within the subclasses to see each of the console.logs.
- **L5 Practice Hands On:** Using Flexbox, create a header and give your page at least ten images that center and evenly space your images across the page while styling to your liking.
- **L6 Practice Hands On:** Using Bootstrap, create a web page that contains a nav bar with four tabs/pills, a drop-down menu, and a search box using glyphs. Create a form that includes first name, last name, phone number, and email. Create a table that has a border, hoverable rows, and three columns with four rows. Lastly, align the table and form next to each other and give three of the buttons different colors while using the Bootstrap Grid Layout.

- **L7 Hands On:** Create a form with two inputs. In your JavaScript file write a function that pulls in the user's information using the DOM and checks the users information using Regex. If everything matches an alert will show otherwise if not matched another alert will populate.
- **L8 Practice Hands On:** Using jQuery, create a header, a paragraph, and unordered list, and two inputs. When the header is hovered the font color should change. When the paragraph is clicked it should show a different paragraph. When the list is double clicked it should hide and when typing in the input it should change color.
- **L9 Hands On:** Using AJAX, create a web page that displays a famous historical figure, Einstein, and his information.
- **L10 Final Project**

### **Final Project:**

Using HTML, CSS, JavaScript, jQuery, Ajax and Git, create a personal website to display your contact information, social media accounts, and examples of your source code. Use Ajax to generate a dynamic list of your projects directly from GitHub.