Coursepak for  
The Frontend:  
Modern JavaScript & CSS Development

DHSI  
Summer 2018  
Victoria, BC

# Course Overview

This course is designed to teach you about modern, industrial best practices for building robust, dynamic, and powerful web applications using JavaScript and CSS.

In the last decade, the complexity that is possible to produce with JavaScript has grown immensely. Now, many dynamic web applications are written entirely in JavaScript, including both the client and the server!

Technologies such as React, Redux, Fetch in JavaScript and SASS (**S**yntactically **A**ware **S**tyle**s**heets) have greatly increased the things programmers can do within a visitor’s browser. We will be talking about all of these technologies during this course.

## The Week’s Plan

Each day of the course, students can expect to learn about the following topics:

1. Getting Started
   1. Node.js
   2. NPM
   3. Atom (text editor)
   4. JavaScript, The Good Stuff
   5. ES6 – What’s New in JS?
2. JavaScript/CSS as Grown-up Languages
   1. Webpack
   2. SASS
   3. Accessing External Data
3. React
   1. Progressive Web Frameworks
   2. Our First React Project
   3. SASS/CSS in React
4. Redux
   1. Managing Application State
   2. Side Effects in Redux
   3. Redux and React
5. Advanced Topics / Future Directions
   1. Testing
   2. React Context API
   3. Express & Server-Side JavaScript

# What’s in the Coursepak?

Rather than include documentation that is available online, this coursepak is taken up with introductory and opinion pieces that will situate you in the modern JS and CSS world.

Specifically, there is material that introduces the basics of JavaScript, CSS, and SASS in addition to highlighting some of the trickier aspects of JS.

**Titles marked in bold** are considered background; please at least glance at them before the start of class.

I have drawn content from a number of sources, but much of the content comes from two important sources:

1. Moacir P. de Sá Pereira’s *The JavaScripting English Major*, which provides basic background on the JavaScript language and also discusses Atom, the text editor I will be recommending you use in this class.
2. Two of Eric Elliott’s excellent series: “Master the JavaScript Interview” and “Composing Software.” The “Interview” series provides background on some of the more esoteric aspects of JavaScript, while “Composing” captures some of the *ethos* behind the recent revolution in JS.

## Atom Documents

Atom is the text editor I recommend for learning programming in 2018. It’s free and it’s pretty powerful.

The entire manual for atom is available online at <https://flight-manual.atom.io/>, but particularly relevant sections have been produced below, along with some recommendations for using Atom.

1. **“Installing Atom”**
2. **“Atom Packages”**
3. “The Ultimate Atom Editor Setup (+for JS/React)” – An exhaustive guide to packages that can be added to Atom for JS development (you won’t need to install all of these, or even any of them).
4. “How I Atom (for Prose)” – Atom is also a good tool for writing in Pandoc Markdown or LaTeX

## JavaScript Documents

1. ***The JavaScripting English******Major***
   1. “Introduction”
   2. “Setting Up the Environment”
   3. “JavaScript Calculator”
   4. “Programming”
   5. “Functions”
   6. “Collections of Data”
   7. “Abstraction”
2. **“A Functional Programmer’s Introduction to JavaScript (Composing Software)”**
3. “Composing Software: An Introduction”
4. **“Master the JavaScript Interview: What is a Closure?”**
5. **“Master the JavaScript Interview: What’s the Difference Between Class & Prototypal Inheritance?”**
6. “Master the JavaScript Interview: What is a Promise?”
7. “Master the JavaScript Interview: What is a Pure Function?”
8. *AirBnB JavaScript Style Guide* – An extremely popular JavaScript style guide

## CSS/SASS Documents

1. **“Getting Started with CSS – Part 1”**
2. **“Getting Started with CSS – Part 2”**
3. “Getting Started with SASS”
4. “Medium’s CSS is Actually Pretty F\*\*king Good” – Interesting overview of code standards in a large CSS project

Atom Documents

JavaScript Documents

SASS Documents