



## Syllabus Weeks 5 - 8

Full Stack

Winter 2015/2016

### OVERVIEW:

The curriculum of weeks 5 - 8 will establish a good base foundation of JavaScript, Rails Testing, ReactJS, and working with and building APIs.

### Week 5

We begin with the basics. A brief history of JavaScript and the differences between JavaScript and Ruby. We will break down the basics of JavaScript into all the meaningful chunks that you need to know. You will create and manipulate variables, Execute JavaScript in your browser, Learn about JavaScript Objects (JSON), Add JavaScript into your Rails Apps, and build more user friendly interfaces with AJAX.

In addition to core JavaScript skills, we will also begin with the basics of **jQuery** **CoffeeScript**. jQuery is a popular JavaScript library that wraps the native JavaScript code and makes working with it much easier for the developer. It also provides a whole bunch of helper functions for animations, DOM manipulation and so much more. CoffeeScript is a programming language that gets compiled down into its raw JavaScript counterpart. The reason why CoffeeScript was born was to make writing JavaScript faster and more ruby like (for developer happiness). JavaScript is quickly becoming one of the most popular and developed languages. This is not a week you want to miss a single day of!

## Week Five Concepts and Competencies

<u>JavaScript</u>	<u>jQuery / Ajax</u>	<u>CoffeeScript</u>
<ul style="list-style-type: none"><li>• Variables</li><li>• Conditionals</li><li>• Loops</li><li>• Functions</li><li>• Objects</li><li>• Arithmetic Functionality</li><li>• Data Types</li><li>• Events</li><li>• DOM</li></ul>	<ul style="list-style-type: none"><li>• jQuery</li><li>• Refactoring into jQuery</li><li>• Basic Library Documentation and follow alongs</li><li>• Basic Animations</li><li>• Pseudo selectors</li><li>• Method Chaining</li><li>• jQuery in Rails</li></ul>	<ul style="list-style-type: none"><li>• CoffeeScript intro / new syntax</li><li>• Conditionals</li><li>• Loops</li><li>• Basic Comprehensions</li><li>• Default Params / String Concat</li><li>• CoffeeScript VS JavaScript</li><li>• Classes</li></ul>

## **Week Six**

TDD, BDD, RSpec. This is testing week! Testing is one of the most important things you can do. Week six has a small segment into Rails Flash Messages / JavaScript Manipulation for Flash and goes right into testing with RSpec in Rails. This week is a short week due to Christmas Break. We will cover Flash / Model Testing Monday, Controller Testing Tuesday, and a mix of getting practice with Model and Controller Testing Wednesday. We will have plenty of Rails projects for project time specifically built to increase your experience with testing your code.

### **Week Six Concepts and Competencies**

<b><u>TDD, BDD</u></b> <ul style="list-style-type: none"><li>• <b>TDD</b><ul style="list-style-type: none"><li>○ <b>Test Driven Development</b></li></ul></li><li>• <b>BDD</b><ul style="list-style-type: none"><li>○ <b>Behavior Driven Development</b></li></ul></li></ul>	<b><u>Rspec</u></b> <ul style="list-style-type: none"><li>• <b>Testing Framework</b></li><li>• <b>Syntax</b></li><li>• <b>Best Practices</b></li><li>• <b>Correct ways to test</b></li><li>• <b>Incorrect ways to test</b></li></ul>	<b><u>Factory Girl</u></b> <ul style="list-style-type: none"><li>• <b>Library to help you write cleaner DRYer tests</b></li></ul>
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## Week Seven

ReactJS. Week seven is going to be an entire week dedicated to you learning the ReactJS Framework. <https://facebook.github.io/react/>. ReactJS is unlike most other popular JavaScript Frameworks out there. Most other popular JavaScript Frameworks implement an entire MVC pattern on the front-end. ReactJS only focuses on the V (View) of MVC. ReactJS lets us build reusable components, taking advantage of a super fast virtual DOM, AJAX, and ES2015. Which makes for fast, responsive, modern user experiences.

### Week Seven Concepts and Competencies

<u>ReactJS</u>	<u>ES2015</u>	<u>DOM / AJAX</u>
<ul style="list-style-type: none"><li>• This is the future of front-end development.</li><li>• Brainchild of Facebook</li><li>• Adopted by 8+ major enterprise software companies in the first 6 months of it being out(Netflix, WordPress, Facebook, HipChat)</li><li>• Component Lifecycle</li><li>• react-rails gem</li><li>• SPA architecture</li><li>• Version 1.0 not even released yet</li></ul>	<ul style="list-style-type: none"><li>• This is the first major update to the JavaScript language in over 15 years!</li><li>• Babel</li><li>• Too many changes to list. We will cover as much as we have time for!</li></ul>	<ul style="list-style-type: none"><li>• Review of DOM</li><li>• Review of AJAX</li></ul>

## **Week Eight**

Week eight is going to cover custom Rake Tasks in Rails, Advanced Associations, Raw SQL refresher, creating APIs, and interacting with APIs. We will also cover any miscellaneous topics that we feel you may need experience with before your second hack-a-ton / technical interviews.

### **Week Eight Concepts and Competencies**

<b><u>Rake Tasks</u></b> <ul style="list-style-type: none"><li>• Learn to build and use custom Rake Tasks in Rails.</li><li>• Rake tasks can be used to populate your Database with a bunch of fake data, send mass emails, bulk update data on a scheduled basis, and so much more.</li></ul>	<b><u>SQL / Advanced Associations</u></b> <ul style="list-style-type: none"><li>• Raw SQL / Active Record Refresher</li><li>• Advanced Associations in Rails</li><li>• Review Topics</li></ul>	<b><u>APIs</u></b> <ul style="list-style-type: none"><li>• Creating your own API Rails server</li><li>• CORS</li><li>• Interacting with your Rails API</li><li>• API Authentication</li><li>• Interacting with other open APIs</li></ul>
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