



# JAVASCRIPT DEVELOPMENT SYLLABUS

## COURSE OVERVIEW

JavaScript is a 10-week, part-time course that will teach students a set of intermediate front-end development skills using JavaScript, jQuery, Git and GitHub and the command line. For the final project, students will build a modern, single-page web application that utilizes industry best practices.

By the end of this course, you will learn:

- › How to work with JavaScript, jQuery, the browser and the DOM
- › The fundamentals of JavaScript, such that you can more easily learn how to work with JavaScript frameworks and libraries
- › The fundamentals of object-oriented programming, such that you can more easily learn another object-oriented language
- › How to consume data from APIs and persist data using a back-end-as-a-service provider like Firebase
- › How to build a modern, single-page application using common design patterns

## UNIT 1: FUNDAMENTALS OF JAVASCRIPT

LESSON #	TOPIC	LEARNING OBJECTIVES
1	Working with JavaScript on the Command Line	<ul style="list-style-type: none"> <li>› <i>Internet fundamentals</i></li> <li>› <i>Understanding the client-server model</i></li> <li>› <i>Understanding JavaScript in the browser vs. the command line</i></li> <li>› <i>Running JavaScript code on the command line using Node.js</i></li> <li>› <i>Introduction to variables</i></li> </ul>
2	Data Types	<ul style="list-style-type: none"> <li>› <i>Working with variables</i></li> <li>› <i>Working with conditionals</i></li> <li>› <i>Understanding data types</i></li> </ul>
3	Collections and Loops	<ul style="list-style-type: none"> <li>› <i>Working with collections</i></li> <li>› <i>Working with loops</i></li> <li>› <i>Iterating over collections</i></li> </ul>
4	Functions and Scope	<ul style="list-style-type: none"> <li>› <i>Working with functions</i></li> <li>› <i>Understanding scope</i></li> </ul>
5	Unit 1 Project, Slackbot	<ul style="list-style-type: none"> <li>› <i>Using the provided scaffolding, build a basic Slackbot that responds to user input and run it locally from your machine in the class Slack channel</i></li> </ul>

## UNIT 2: THE BROWSER AND APIS

LESSON #	TOPIC	LEARNING OBJECTIVES
6	Objects and JSON	<ul style="list-style-type: none"> <li>› <i>Working with objects and methods</i></li> <li>› <i>Intro to JSON</i></li> <li>› <i>Working with JSON-formatted data</i></li> </ul>
7	Intro to the DOM and jQuery	<ul style="list-style-type: none"> <li>› <i>Intro to jQuery</i></li> <li>› <i>Understanding the DOM</i></li> <li>› <i>Forms and user input</i></li> </ul>
8	DOM and jQuery, continued	<ul style="list-style-type: none"> <li>› <i>Events and listeners</i></li> <li>› <i>Manipulating objects in the DOM</i></li> </ul>



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## UNIT 2 (CONTINUED): THE BROWSER AND APIS

LESSON #	TOPIC	LEARNING OBJECTIVES
9	AJAX and APIs	<ul style="list-style-type: none"><li>› Intro to AJAX</li><li>› Making API calls</li><li>› Consuming and working with API data</li></ul>
10	Asynchronous JavaScript and Callbacks	<ul style="list-style-type: none"><li>› Understanding asynchronous vs. synchronous</li><li>› Working with asynchronous APIs</li><li>› Working with callbacks</li></ul>
	Unit 2 Take Home Project: API Consuming App	<ul style="list-style-type: none"><li>› Build a simple, single-page application that consumes data from an open, third-party API</li></ul>

## UNIT 3: PERSISTING DATA AND ADVANCED TOPICS

LESSON #	TOPIC	LEARNING OBJECTIVES
11	Advanced APIs	<ul style="list-style-type: none"><li>› Authentication</li><li>› Working with tokens and API keys</li><li>› Working with OAuth</li></ul>
12	Prototypal Inheritance	<ul style="list-style-type: none"><li>› Intro to prototypal inheritance</li><li>› Working with prototypes</li><li>› Working with constructors</li></ul>
13	This and Anonymous Functions	<ul style="list-style-type: none"><li>› Understanding “This”</li><li>› Working with anonymous functions</li></ul>
14	Intro to CRUD and Firebase	<ul style="list-style-type: none"><li>› Understanding CRUD</li><li>› Intro to Firebase</li><li>› Writing user data to Firebase</li><li>› Retrieving and updating user data</li></ul>
15	In-Class Lab	<ul style="list-style-type: none"><li>› Begin working on your final project: a single-page application that consumes data from at least one API and persists user data via Firebase</li></ul>

## UNIT 4: BUILDING AND DEPLOYING YOUR APP

LESSON #	TOPIC	LEARNING OBJECTIVES
16	Deploying Your App	<ul style="list-style-type: none"><li>› Deploying your app to GitHub Pages/Heroku</li><li>› Using a custom domain name with GitHub Pages/Heroku</li><li>› Using Firebase with Heroku</li></ul>
17	Instructor/Student Choice	<ul style="list-style-type: none"><li>› Instructor will choose a topic that is not covered in the syllabus and prepare and teach an original lesson on that topic</li><li>› Sample topics include introductions to various JavaScript frameworks not covered in class</li></ul>
18	Lab Time	<ul style="list-style-type: none"><li>› Work on your final project with assistance from your peers and the instructional team</li></ul>
19	Lab Time	<ul style="list-style-type: none"><li>› Work on your final project with assistance from your peers and the instructional team</li></ul>
20	Final Project Presentations	<ul style="list-style-type: none"><li>› Present your final project: a single-page application that consumes data from at least one API and persists user data via Firebase</li></ul>