



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">▸ <i>Internet fundamentals</i>▸ <i>Understanding the client-server model</i>▸ <i>Understanding JavaScript in the browser vs. the command line</i>▸ <i>Running JavaScript code on the command line using Node.js</i>▸ <i>Introduction to variables</i>
2	Data Types	<ul style="list-style-type: none">▸ <i>Working with variables</i>▸ <i>Working with conditionals</i>▸ <i>Understanding data types</i>
3	Collections and Loops	<ul style="list-style-type: none">▸ <i>Working with collections</i>▸ <i>Working with loops</i>▸ <i>Iterating over collections</i>
4	Functions and Scope	<ul style="list-style-type: none">▸ <i>Working with functions</i>▸ <i>Understanding scope</i>
5	Unit 1 Project, Slackbot	<ul style="list-style-type: none">▸ <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>

UNIT 2: THE BROWSER AND APIS

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



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

UNIT 3: PERSISTING DATA AND ADVANCED TOPICS

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

UNIT 4: BUILDING AND DEPLOYING YOUR APP

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