



Full Stack Immersive Syllabus

Jan 9th - Mar 31st
Mon - Fri
9am - 5pm

Introduction

The Full Stack Immersive bootcamp covers backend, front end and mobile development using the most up-to-date technologies. Using Node JS, Mongo, Express and React (with ES6), we create fully functional websites apps with user registration, image uploading, and email notification functionality. We also deeply explore React Native which leverages the powerful React library to build native iOS and Android apps in JavaScript. The Full Stack Immersive is one of a kind - we cover all the areas of the stack (backend, front end, mobile) with the most modern libraries, frameworks and language.

Who

The Full Stack Immersive is designed for beginner to intermediate programmers. A typical applicant has written basic code before, possibly tinkered with jQuery and JavaScript and/or a framework like Ruby on Rails. You should be comfortable writing simple programs to perform string manipulation, arithmetic operations, etc. HTML should be familiar as well. This should not be your first time coding. If you are a beginner who is looking for the next step and is eager to learn, this course is for you.

Tuition

Tuition for the course is \$12,500 with a \$2,000 deposit. We offer tuition assistance and scholarships for qualified students.

Payment plans are flexible and most students do not pay full tuition upfront. A typical payment schedule after the deposit is bi-weekly installments. For students who pay full tuition upfront, there is a \$1,000 immediate discount. For more information, email katrina@velocity360.io.



Unit 1

Node/Express/REST API

A good REST API is the foundation of modern day web applications. During this unit, we emphasize the importance of proper REST (Representation State Transfer) architecture and implement a stable, well-designed API using Node, Express and MongoDB. We will also explore databases and Object to Relational Mapping (ORM) tools such as Mongoose.

- The Express framework for Node
- Node Package Manager
- Client-Server Architecture
- Model-View-Controller
- HTTP Requests
- JSON
- MongoDB and Mongoose
- Principles of RESTful design
- GET, POST, PUT, DELETE
- Model-specific controllers
- Querying our database
- Error handling
- Defining our endpoints

Unit 2

React

React is a front end library that enables our site to render data from our API in a dynamic and modular fashion. During unit 2, we will explore the core principles underlying React development and assemble a static front end using pre-formatted web themes. React has ushered a completely new way of developing UI and managing data on the front end with state and props.

- React View Components
- Component lifecycle methods
- Communicating between components
- State vs Props
- Handling user interaction in components
- React based styling
- Using third party components
- Webpack, Babel, Gulp
- Writing React in ES6
- Unidirectional data flow with Redux
- Actions, Dispatcher, Stores, Reducers
- Making API calls to your backend
- Updating app state with Redux
- Server actions vs View actions
- Server-side rendering
- React Router
- Performance optimization

Unit 3

React Native

React Native is a ground breaking cross platform framework which allows developers to build mobile apps for iOS and Android using React. All of the React concepts covered to this point are now applied to a mobile environment and the results are equally performant as native code. We will devote this unit to developing mobile apps on the React Native platform to truly create a full-stack user experience: front end, backend, and mobile.

- iOS Routing
- API calls with fetch
- ListView
- Navigator
- API integration
- Error handling
- Styling
- Image handling
- ScrollView
- Webview
- Geolocation
- Live chat with Firebase

Unit 4

Amazon Web Services

Increasingly, mature companies and startups seek developers who are comfortable working with servers and handling server environments. The gold standard in this area is Amazon Web Services (AWS) which encapsulates a tremendous ecosystem of infrastructure layers that entire companies are built on. We will deeply explore this area, particularly the Elastic Compute Cloud (EC2) system to deploy our projects and set up scalable systems.

- Elastic Cloud Compute (EC2)
- Amazon Machine Images
- Elastic Load Balancer
- Auto Scaling Groups
- Elastic Beanstalk
- Simple Storage Service (S3)

Unit 5

Docker Containers

A ground-breaking technology, Docker Containers are quickly becoming the de-facto standard for standardizing the development process among teams. A Docker Container provides a consistent development environment across machines enabling teams to work more seamlessly. We will set up our containers with the Amazon ECS service and coordinate a server cluster with load balancer and auto-scaling capability.

- Creating Images locally
- Registering images in Docker Hub
- Running images in EC2 instance
- EC2 Container Service
- Coordinating clusters in ECS
- Auto scaling groups
- Running tasks in ECS

Unit 6

Final Project - 4 weeks

The final phase of the course is dedicated to personal projects during which students build an app of their choosing. This can be a web app, mobile app or both however we strongly recommend you choose one or the other. If you work with a partner, the responsibility between web and mobile can be split.

Projects will be carefully pre-screened by instructors to ensure their feasibility within time constraints. In addition, Velocity 360 will reach out to local startups in NYC for project consideration. Students may choose to work with one of these groups or build their own project.

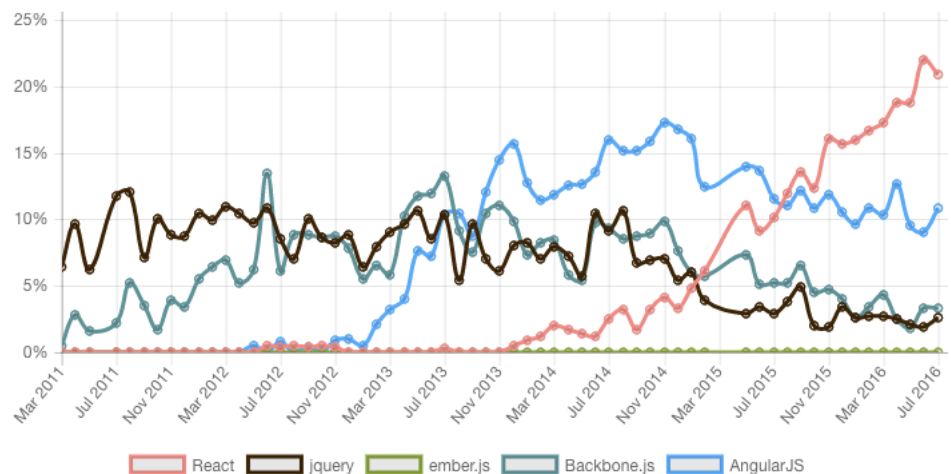
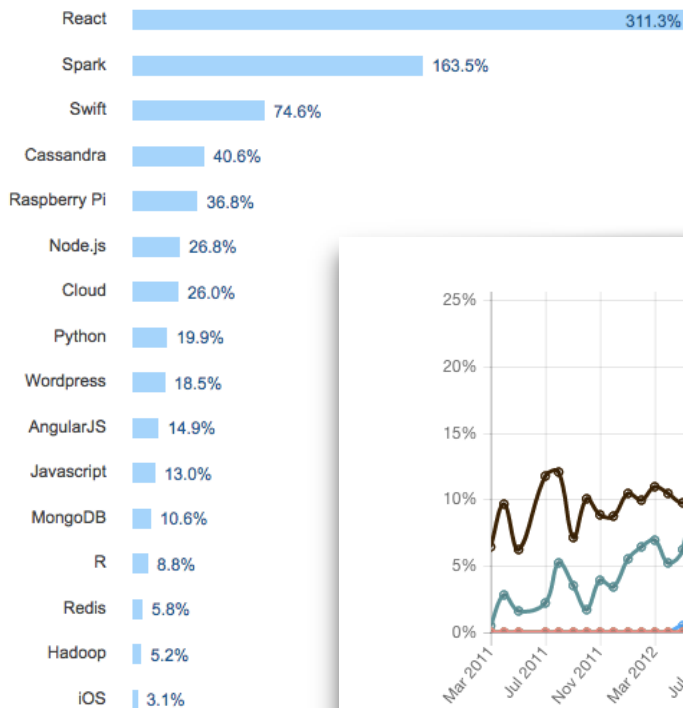
Why Node, React & React Native

Simply put, React with Node is the most demanded tech stack today among startups and leading tech companies like Facebook and AirBnB. React with Node brings powerful component-based architecture to the web, all under a single language. According to StackOverflow's 2016 Developer Survey, React is the Top Trending Tech by a large margin (see charts below). Ruby on Rails is not even in the Top Paying Tech list, yet React is. The data speaks for itself.

Technology, more than any other industry, changes rapidly and many fall behind. As a newcomer to tech, it is imperative to understand the trends and develop the skills that will be valued tomorrow over those in vogue today. To that end, Velocity 360 focuses on the tremendously growing ecosystem of Node, React, and React Native.

IV. Trending Tech on Stack Overflow

Winners Losers



* <http://stackoverflow.com/research/developer-survey-2016#technology-trending-tech-on-stack-overflow>

Instructors

Instructors at Velocity 360 are all professionals either currently working as developers or with at least five years of experience. The common theme we share is our love of programming and our enjoyment of teaching it.

We have worked with several teams and on projects both small and large. We strongly adhere to industry best practices and our methodologies derive straight from the professional environment.

Career Assistance

A key component of the bootcamp is career assistance. Throughout the entirety of the course, we will reach out to local startups, development agencies, recruiting firms and large companies to introduce our cohort to the community. By the time the cohort ends, there will be a large number of companies already aware of you and your tech background. The course will end with a career day in which invited companies will come to meet the students and view your work.

During the Final Project phase of the course, one of our lead instructors will come in periodically to conduct interview prep and offer direction on the job search. Afterward the course, we will follow up once a week to check in on the process and to provide direction on the search process as well promising leads.

Apply

To apply, visit <https://www.velocity360.io/course/full-stack-immersive> and click the 'Apply' button. Applications are due no later than November 28th and all applicants will be considered for scholarships. All admitted women will be automatically awarded a \$1,000 scholarship in addition to any merit-based awards. For more information, contact katrina@velocity360.io.



Dan Kwon

Instructor

Dan is a full stack developer focusing on building MVPs for early stage startups in New York. As a consultant, he has worked with several startups and development agencies over a five year span. Dan specializes in iOS, backend technologies such as Node JS, Google Compute Engine, Heroku, and AWS as well as front end libraries such as React and Angular JS. Dan graduated from Cornell University where he walked to class in the snow, uphill both ways.



Roger Beaman

Instructor

Roger Beaman is a passionate full stack JavaScript developer that took the unusual route to software development which perhaps you are on right now. He started work in finance and found that writing Excel formulas was by far the most exciting part of his job. Thus began a journey to joining you in the exciting career that is software development. In under a year he was able to go from a bootcamp to a lead developer at Shutterstock and he is excited about sharing the knowledge and advice he has to help you do the same.