

# Part-Time

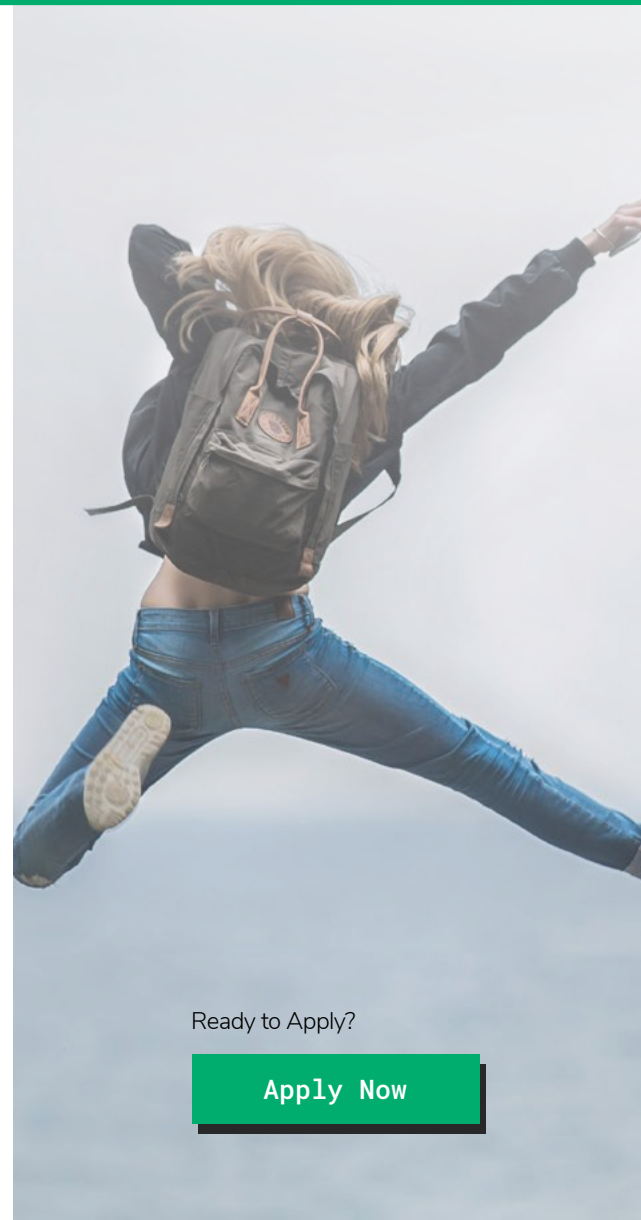
# Syllabus

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Python + React/JS

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# Full Stack Development

## Python + React/JS Track

Powered By

**BOTTEGA**

### Track Description

This comprehensive full stack development track focuses on teaching Python and React; two of the industry's leading languages for job demand, and projected growth.

Students learn the fundamentals of computer programming, gain a greater understanding of object-oriented programming, and learn modern front-end and design principles.

### Track Key Competencies

- ◆ Web Development Foundations
- ◆ OOP Foundations (Python)
- ◆ OOP Advanced Skills (Python)
- ◆ Adv. Web Development (React/JS)
- ◆ Database Foundations
- ◆ Developer Soft Skills
- ◆ Job Preparation

### Track Materials

- ◆ Bottega's top-of-the-line learning management system (LMS), DevCamp, provides a dynamic learning experience by delivering learning materials and interaction for every student's success; our curriculum targets the skills necessary for real world application.
- ◆ Students must have access to a desktop or laptop (preferably Mac) that is less than 3 years old, 2.7 GHz/i5 - i5 processor and has 8 GB of RAM and 500 GB SSHD  
\*No exceptions\*. Students connecting remotely need access to a web cam and microphone for remote conferencing.
- ◆ Stable, high-speed internet and secondary monitors are helpful.

### Grading System

- ◆ 450 – 500 points = A
- ◆ 400 – 449 points = B
- ◆ 350 – 399 points = C
- ◆ 300 – 349 points = D
- ◆ Below 299 points = F

### Time To Complete

Part Time

- ◆ Video Viewing: 760+
- ◆ Assigned Projects: 15
- ◆ Examinations: 2

PT Total Hours: 600

# Curriculum Overview

## CS 277 Intro to Programming (Python)

Introduces fundamental concepts of computer programming; such as structure, syntax, problem solving, data types, decision logic, loops, functions, arrays, and more.

Recommended 3.0 Credits

## CS 301 Front End Foundations (JavaScript)

Covers design and development of browser-based programs; teaching generation of HTML via JavaScript, debugging, web server communication, and use of XML and JSON.

Recommended 3.0 Credits

## CS 497 Advanced Web Development (React)

Development of complex web applications, Including: web security, data markup languages, server side scripting, web database interactions, web service architectures, etc.

Recommended 3.0 Credits

## CS 384 Advanced Python Development

Covers advanced Python concepts, such as: scripting, dynamic typing, iterators, generators, coroutines, modules, packages and scope, runtime services, data wrangling, etc.

Recommended 3.0 Credits

## CS 382 Database Foundations

Introduces theory, concepts, architecture, and use of database management systems (DBMS). Presents common database models and languages used in both local and client/server databases.

Recommended 3.0 Credits



## Python + React/JS

Recommended 15 Credits

### Python

A object-oriented programming language that empowers both novice and experienced programmers to create a wide variety of application types.

### React/JS

A powerful javascript library that handles data dynamically and aims to provide speed, simplicity, and scalability to user interfaces.

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# Track Itinerary

Part-Time Program

## Track Breakdown



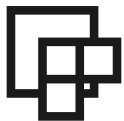
Pre-work  
(prerequisite) Course



Python + React/JS



15+ Projects



12 Modules



2 Progress Checkpoints  
Per Module



20 Hours  
Per Week



600 Hours  
To Complete

# 1:3

### Instruction : Application

With devCamp instruction timing in at 124 hours, we recommend 3 hours of related study and application for every hour of instruction to master the curriculum. Application consists of: project building, code submissions, note-taking, code alongs, mentor sessions, additional reading, review, etc.

# 6-9

### Months To Graduate

To graduate on-time, students are encouraged to complete 1 checkpoint every week; this equates to 5 hours of instruction and 15 hours of application (20 hours in total). The 600 total hour track that students must complete includes the digital literacy course and the full stack python + react software development track.

# Part-Time Itinerary

## Module 1 (10 hrs)



### Curriculum Topics



### Projects

#### Checkpoint 1

- ◆ Intro to SCSS
- ◆ SCSS Basics
- ◆ SCSS Mixins
- ◆ Advanced SCSS
- ◆ CSS Grid Basics
- ◆ Flexbox Mixin (SCSS)
- ◆ Search Engine Site (Front End)

#### Checkpoint 2

- ◆ UX For Developers
- ◆ UI For Developers
- ◆ Flexbox Capstone (CSS)
- ◆ Portfolio Website (UX)

## Module 2 (10.3 hrs)



### Curriculum Topics



### Projects

#### Checkpoint 1

- ◆ UI For Developers
- ◆ Intro to Programming (Python)
- ◆ Variables in Python
- ◆ Python Strings
- ◆ Portfolio Application and Logo

#### Checkpoint 2

- ◆ Python Coding Exercises
- ◆ Python Numbers
- ◆ Python Data Structures

## Module 3 (10.4 hrs)



### Curriculum Topics



### Projects

#### Checkpoint 1

- ◆ Python Coding Exercises
- ◆ Python Loops
- ◆ Python Conditionals
- ◆ Methods & Functions
- ◆ Fizz Buzz in Python
- ◆ Web Scraper in Python

#### Checkpoint 2

- ◆ OOP in Python
- ◆ Python Coding Exercises
- ◆ API Development in Flask
- ◆ Hello World Application in Flask

## Module 4 (10.4 hrs)



### Curriculum Topics

### </> Projects

#### Checkpoint 1

- ◆ JavaScript (JS) Basics
- ◆ JS Functions
- ◆ JS Coding Exercises
- ◆ JS Arrays and Data Structure
- ◆ JS Conditionals

#### Checkpoint 2

- ◆ JS Arrays and Data Structure
- ◆ JS Coding Exercises
- ◆ JS Loops and Iterators
- ◆ JS Promises
- ◆ JS Automating Tasks
- ◆ Async and Await
- ◆ Modern JS Development

## Module 5 (10.6 hrs)



### Curriculum Topics

### </> Projects

#### Checkpoint 1

- ◆ Modern JavaScript (JS) Tools
- ◆ JS Modules
- ◆ JS Coding Exercises
- ◆ Package Management

#### Checkpoint 2

- ◆ Git Basics
- ◆ Build A Casino Game (JS)

## Module 6 (10.6 hrs)



### Curriculum Topics

### </> Projects

#### Checkpoint 1

- ◆ Git Branches
- ◆ JS and the DOM
- ◆ JavaScript (JS) In The Browser

#### Checkpoint 2

- ◆ JS Coding Exercises
- ◆ React Components
- ◆ Bullet Points Manipulation Between Lists
- ◆ Browser Tools
- ◆ State in React
- ◆ React Project
- ◆ React Tutorial
- ◆ Working With Git
- ◆ Madlib Game
- ◆ Intro and Setup for React



## Curriculum Topics

## &lt;/&gt; Projects

## Checkpoint 1

- ◆ CSS Grid
- ◆ Styling Components
- ◆ Deep Dive into Props,
- States and This
- ◆ Push to Heroku
- Clip Paths
- ◆ Madlib Game
- ◆ Birthday Countdown App

## Checkpoint 2

- ◆ React Date Picker
- ◆ Bug Fixes
- ◆ Deep Dive Component Life Cycle
- ◆ React Components
- ◆ CSS Grid
- ◆ React Components
- ◆ Birthday Countdown App
- ◆ Class Scheduling Application



## Curriculum Topics

## &lt;/&gt; Projects

## Checkpoint 1

- ◆ Intro to Redux
- ◆ Build Progress Tracker
- ◆ React Action Animations
- ◆ Class Scheduling Application

## Checkpoint 2

- ◆ Resume
- ◆ Linked In
- ◆ Interview Tips
- ◆ React Components
- ◆ Redux Form
- ◆ Setup Local DevServer
- ◆ Property Management Application



## Curriculum Topics

## &lt;/&gt; Projects

## Checkpoint 1

- ◆ JavaScript Date Object
- ◆ Button Animations CSS
- ◆ Parse a Date in JS
- ◆ Property Management Application

## Checkpoint 2

- ◆ Map Data to a Form
- ◆ Redux in the App
- ◆ Reusing React Components
- ◆ Property Management Application

## Module 10 (10.6 hrs)



### Curriculum Topics



### Projects

#### Checkpoint 1

- ◆ Refactor CSS Grid
- ◆ React Routes
- ◆ Property Management Application
- ◆ Bug Fixes
- ◆ Setting Up Redux
- ◆ API Search Engine
- ◆ Form Data in React
- ◆ Redux DevTools

#### Checkpoint 2

- ◆ SQL System Configuration
- ◆ API Search Engine
- ◆ Deploy to Heroku
- ◆ Vanilla JS
- ◆ CSS Grid

## Module 11 (10.7 hrs)



### Curriculum Topics



### Projects

#### Checkpoint 1

- ◆ SQL Creating, Reading, Updating, Deleting
- ◆ Relational Queries
- ◆ SQL Database Project
- ◆ SQL Advanced Queries
- ◆ Advanced SQL
- ◆ Redis Course Project
- ◆ SQL Functions
- ◆ Redis System Config
- ◆ Control Flow in SQL
- ◆ Redis Commands
- ◆ Redis Hashes

#### Checkpoint 2

- ◆ Creating React Components
- ◆ Building Sign up Forms
- ◆ eCommerce Shop
- ◆ Building Headers and Nav Bars

## Module 12 (10.2 hrs)



### Curriculum Topics



### Projects

#### Checkpoint 1

- ◆ Creating Routes
- ◆ eCommerce Shop
- ◆ Building A Chart
- ◆ Creating Components

#### Checkpoint 2

- ◆ Add Products To A Cart
- ◆ eCommerce Shop
- ◆ Build Payment Forms
- ◆ Capstone Project
- ◆ JSX for Shipping Forms