



Curriculum

This is a fluid curriculum that is subject to change

MODULE 0

On-Boarding

Get ready for your upcoming Cohort through playful preparation.

- Pre-Work sessions
- Onboarding Specialist
- Tech-check
- Orientation
- Pre-Work on-ramp

MODULE 1

Intro + HTML / CSS

Section 1: Introduction

- Orientation:
 - Introductions
 - Class Plan (Programming languages, Frameworks, Projects)
 - Contracts Signed & Syllabus
- Review pre-work
- Git
 - Git & GitHub
 - GitHub Pages
- Setup Python Environment (Python 3.x)

Section 2: HTML/CSS

- Review HTML/CSS
- Intro to Bootstrap v4
- Developer Tools
- Demo: Bootstrap Website

Section 3: Bootstrap

- Bootstrap (mobile optimization)
- Advanced CSS (animations/keyframes, browser support, media tags, transforms)

Section 4: Project

- Create mockup for Law Firm

Section 5: Project

- Finish Law Firm Mockup website

MODULE 2

Basic Python

Section 1: Intro to python

- Introduction to Python
- Basic Elements
 - Variable Assignment - Draw variable memory assignment
 - Control Flows - Loops & Conditional Statements
 - String Input/Output

Section 2: Functions

- Functions and Scoping
- Data Collections I (Tuples, Lists, Strings)
- List Comprehensions

Section 3: Python Data structures

- Data Collections II (Dictionary, Set)
- Intro Modules and Importing System

Section 4: Object Oriented Programming

- Object-Oriented Programming (OOP)
- The 'self' keyword
- Access properties and methods
- Instantiation

Section 5: Project

- Create a Hangman game using OOP

MODULE 3

Advanced Python

Section 1: Advanced Python

- Advanced Object-Oriented Programming
 - Creating Multiple Instances through Loops
 - Magic Methods
 - Object Inheritance
 - Method Overriding
 - Inheriting Multiple Classes

Section 2: Higher Order Functions

- Map, Reduce, Filter, and Lambda
- Recursive Functions
- Extra: Generator and Iterator

Section 3: Regular Expressions

- Intro to Regular Expressions
- Merge two sorted arrays and Merge sort

Section 4: Algorithms

- Binary Search
- Introduction to Dynamic programming/Memoization
- Decorators

Section 5: Project

- Project: BlackJack (OOP)

MODULE 4

Advanced Python Cont.

Section 1: Error Handling

- Exception Handling
 - The difference between a syntax error and an exception
 - Using Try/Catch
 - Catching specific exceptions
 - Try with Else Clause
 - Finally keyword
 - Raising/Creating Exceptions

Section 2: Decorators

- Decorators
 - Functions as Objects
 - Passing functions as arguments
 - Return a function from another function
 - Unwrapping the layers of a decorator
 - What if a function returns something or an argument is passed?
 - Chaining Decorators

Section 3: Collections

- Collections
 - Initializing Counter Object
 - OrderedDict
 - DefaultDict
 - ChainMap
 - NamedTuple
 - DeQue
 - UserDict
 - UserList
 - UserString

Section 4: Generators

- Generators (Explored)
 - Using a Generator as a function
 - Using a Generator as an Object
 - Similarities between the approaches

"I would recommend this course to anyone of any skillset - if you have the drive and an open mind, you can do it!"

Ashley F.

MODULE 5

Databases

Section 1: Defining Databases

- Spreadsheet vs Database
- Different types of databases: NoSQL, CSV, SQLite, JSON, etc.
- Concept of relational database. Introduce relational model PK, FK, CK...
- Install PostgreSQL (Make sure to install the sample database) and introduce other tools.
- Workshop:
 - Familiarization with SELECT, WHERE, AS and
 - FROM statements

Section 2: Queries

- Subqueries
- DDL, DML, DCL, TCL
 - CREATE, ALTER, DELETE, UPDATE
- Constraints

Section 3: Joins

- JOINS
- SQL Tools
- SQLite Viewer
- DB Designer

Section 4: Database Designing

- Database Design
- Normalization
- Advance topics

Section 5: Project

- Interviews: 10 minutes per person
- Project:
 - Build Car Dealership Database and Answer Questions

MODULE 6

Flask

Section 1: Getting Started

- Setup Flask Project
- Routing
- Jinja2 Templates & How They Work

Section 2: Ramping up with Flask

- Flask Bootstrap
- Organizing file structure
- Mixins
- Decorators
- Workshop:
 - Control flow with Jinja2

Section 3: Flask Forms

- Flask Forms (WTForms)
- MVC and web app design
- Flask Database Setup with SQLite
- Workshop:
 - Flask app using web form for login page
 - Web application refactor

Section 4: Authentication

- Registration & Login
 - User Authentication
 - Password Hashing
- Database Migration
- User Query

Section 5: Deployment/Project

- Interviews: 10 minutes per person
- Project:
 - Convert NZA Law website to a Flask Application

"It is not just the instructors, the staff in general is amazing, from student relations, to career counseling, to the post-grad job-search assistance, I really cant recommend this school and its staff enough!!"

Alex E.

MODULE 7

JavaScript

Section 1: JavaScript Programming

- Frontend
- How to learn another programming language
- JavaScript Language I
 - Types
 - Variable Constant
 - Operations
 - Control flow
 - Syntax

Section 2: Building Blocks of JS

- JavaScript Language II
 - Functions
 - Objects and Prototypes
 - Scoping & Function Closures
 - DOM Structure

Section 3: Using 3rd Party APIs

- JavaScript and working with the Document Object Model (DOM)
- Making API Calls with JavaScript
- Demo:
 - A JAX Calls with Axios/Fetch

Section 4: Working with Data in JS

- JSON
- APIs
- REST
- Demo:
 - Building a Spotify Movie Poster Collage (Spotify REST API)

Section 5: Project

- Interviews: 10 minutes per person
- Project:
 - Build functional Weather App with the OpenWeatherMap REST API

MODULE 8

TypeScript

Section 1: TypeScript Programming

- Type Declarations
- Basic Types, Creating Types
- Functions
- Implicit/Explicit Types
- TypeScript Objects
- Union, Intersection, and Literal Types

Section 2: TypeScript and Advanced Object Oriented Programming

- Accessors
- Classes
- Interfaces
- Polymorphism
- Method overriding
- Encapsulation
- Programming to Interface

Section 3: TypeScript Configuration and Generics

- Generics
- Compiling TypeScript Applications
- Introduction to NPM
- Configuring TSconfig
- Using Node modules
- 3rd Party Types

Section 4: TS and the DOM, Introduction to Webpack, Advanced System Design

- Bundling with Webpack
- Creating dev environment with Live Server
- TypeScript and the Document Object Model
- HTML/CSS Types
- Designing an OOP System

Section 5: Front End Shopping Class Based Shopping Cart

- Designing a OOP System to handle User and Cart functionalities
- Designing a front end to utilize this system
- Bundling this system with Webpack

“Highly recommended for anyone wanting to get into tech but not knowing where to start!”

Kevin S.

MODULE 9

React

Section 1: Getting started with React

- Install NodeJS and NPM (Node Package Manager)
- Creating a React app with - Create-React-App tool chain and Create Basic application
 - Difference between basic and normal setup
 - Why the use of the tool chain is important
- ES6 Syntax
- TypeScript Syntax
- React Components
- React Router

Section 2: React Building Blocks

- Component Life Cycle
- State Management
- React Hooks
 - useEffect
 - useState
- CRUD operations using React
- Workshop:
 - Using React hooks and CRUD - Display Drone API Data

Section 3: Hooks

- Custom Hooks (Hooks Continued)
- React-Hook-Form (Form State Management)

Section 4: Firebase

- Firebase
 - Authentication
 - Deployment

Section 5: Project

- Marvel Members (commit)

MODULE 10

Capstone Project

There will be one capstone project for this course

Project: Creating your first Full-Stack Application

Build a phonebook app together with your instructor in-class by incorporating Flask, postgresSQL, HTML, and CSS to build a backend API. Practice your new skills on your own by building your own meme generator or mock library application.

MODULE 11

Career Readiness

You graduated, Congratulations! Now, the real work begins. This is where you will work with our Career Partnerships team to make sure you are ready to start applying for jobs.

Getting Started with Job Search

- Coding assessments
- Mock Interviews
- Whiteboard Sessions
- Resume preparation
- Workshops
- Harnessing the power of AI for your job search
- Huntr