



Univelcity
A = V / T

DATA
STRUCTURES
ALGORITHMS
PROGRAMMING
WEB DEVELOPMENT
DATA SCIENCE
ARTIFICIAL
INTELLIGENCE
BLOCKCHAIN
CRYPTOGRAPHY
BLOCKCHAIN
DEVELOPMENT
DATA SCIENCE
ALGORITHMS
PROGRAMMING
WEB DEVELOPMENT
DATA STRUCTURES

12 Weeks Curriculum (Micro Diploma)

Introduction to Computer Science, HTML, CSS, Web tools, Git, and Javascript, ES6, React

OVERVIEW

ABOUT THIS COURSE

This is an intensive training curriculum, designed to build your knowledge from scratch. This means that by the end of the course duration, you should have attained a high level of competence in the concepts of web development.

SKILLS TO MASTER

HTML, CSS, JAVASCRIPT, REACT, GIT/GITHUB

PRE-REQUISITES

This course is suitable for people who have little or zero knowledge about programming or how the web works. However, participants of this course must know what a computer is, and how to use it/navigate their way around it, at the very least.

- Laptop (4GB RAM minimum)
- Willingness to learn

WHAT YOU WILL LEARN

The Front-end Web Development Path will guide you through what you need to know to start a career as a Front-end Engineer from the ground up.

You will learn;

- Layout a simple webpage using HTML
- Style a website element using CSS
- Using Git and Github for version control
- Create web projects with JavaScript
- Query a database that uses and stores information
- Design technical architecture using UML diagrams
- Implement unit and integration tests
- Web APIs and Asynchronous Applications
- Optimize performance
- Create responsive interfaces
- Debug and troubleshoot errors and failures in JavaScript programs
- Write and test software with JavaScript



SYLLABUS

Course Outline

WEEK 1

Introduction to Web Development/HTML Introduction to HTML

- How the internet works
- Understanding Basic HTML tags and attributes (Inline and Block-Level Elements)
- Building a basic layout of a webpage
- Understanding Semantic HTML/HTML5
- Understanding File Paths and how the browser parses HTML/DOM Tree

WEEK 2

Styling HTML Web Pages

Overview of CSS

- Introduction to CSS Selectors
- Understanding Inline, Internal and External Stylesheets
- Understanding Values and Units
- Understanding the Box Model and CSS Layout
- Enhancing the Design of a Web Page with CSS
- Introduction to responsive Layout and CSS Flexbox

WEEK 3

Intermediate CSS

Crafting responsive layouts

- More on CSS Flexbox
- CSS Grid Layouts
- Positioning in CSS
- Basic CSS Transforms
- Code Along - How the pros do it
- Understanding CSS Transitions



SYLLABUS



WEEK 4

Bootstrap and Responsive Design

Introduction to Bootstrap

- Understanding Bootstrap classes, attributes
- Understanding how Bootstrap works under the hood Bootstrap grid system
- Bootstrap CSS Components
- Bootstrap Javascript components

Week 5

Javascript Fundamentals and DOM

Introduction to Javascript

- Understanding Basic programming concepts like variables, data types and conditional statements
- Understanding the basic syntax of the JavaScript Programming Language
- Introduction to the console and understanding how to debug a program
- Understanding JavaScript loops and arrays
- Understanding Functions and why they are useful Events Handling and DOM

WEEK 6

Javascript Fundamentals and DOM (ii)

Javascript objects and Methods

- Understanding Object-literals, JSON, Extension and Prototyping etc.
- Introduction to Object-oriented Programming (OOP) Introduction to AJAX
- Understanding and implementing AJAX
- Restful Api and Fetch

WEEK 7

ES6 and Javascript Modules

New Variables — Creation, Updating & Scoping

- Function Improvements: Arrows and Default Arguments



SYLLABUS



- Template Strings
- Destructuring
- Iterables & Looping
- An Array of Array Improvements
- ES6 Spread and Rest
- Object Literal Upgrades
- Promises
- ES6 Tooling
- ES6 Classes
- Generators
- Proxies
- Sets and WeakSets
- Map and Weak Map **WEEK 8**

Project week

Here we will do projects to cement the knowledge gathered so far. Projects will be discussed and challenges will be given to participating students.

WEEK 9

React

Introduction to REACT

- Understanding how React works Using React CDN
- Creating and using React Components
- What is State? working with state in React React Dev Tools
- DOM Events
- Changing State
- Intro to forms
- Create React App

WEEK 10

React - (ii)

Single Page Applications (SPAs) with React

- Nesting Components
- Props



SYLLABUS



- Outputting Lists
- Stateless Components
- Conditional Output
- Revisiting Forms
- Functions as props
- Deleting Data
- Recap & the Virtual DOM

WEEK 11

React (iii)

CSS files in React

- Lifecycle Methods
- Basic React TODO APP Project
- Basic React STOPWATCH/Timer Project Basic CSS Transforms
- Introduction to React Router
- React Router - Programmatic Redirects Higher-Order Components
- Using Axios
- Route Params

WEEK 12

React (iv)

Using the Switch Tag

- Importing Images
- Intro to redux
- Redux Stores
- Redux Actions
- Redux Reducers
- Store Subscriptions
- Using Redux with React
- Mapping State to Props
- Blog Detail Page
- Map Dispatch to Props
- Action Creators
- Wrap-up and Next Steps



SYLLABUS



FINAL/CAPSTONE PROJECT:

This project provides the student with the opportunity to use the knowledge they have gained all through the course in solving a given problem.

CONTACT INFORMATION

Univelcity

📍 42 Montgomery Road, Yaba, Lagos

📞 +234 703 618 8527

✉️ hello@univelcity.com

