practicalProgramming

Front-End Development Course Syllabus

Week 1 - Front End Development

Day	Overview	Students will be able to...
1	**Web fundamentals and framework** Ever wondered WHAT ACTUALLY HAPPENS when you select a website in your browser? How did the founding web engineers create this world? Day 1 of our course discusses these fundamental concepts. You will then apply hands on developing code in HTML and CSS.	1. Assess and analyze the framework of the world wide web 2. Explain the role of HTTP within every web application 3. **Develop a simple web application utilizing HTML and CSS**
2	**Web responsiveness and layout** Nowadays, the challenge for working web developers is to create web applications that are FIT to each piece of hardware. Whether it be a phone, tablet or Desktop, day 2 of this course uncovers how to make applications fit for various viewports.	1. Explain the concept of a CDN in reference to modern application hosted on a server 2. Create a CDN request network utilizing Bootstrap 3. **Apply Bootstrap to their project application to render content on various viewports**
3	**Project/Development in web responsiveness** Students will be given a day to work alongside the help of their fellow classmates and instructor to develop a complete front end view of a web application	1. Develop a responsive website layout utilizing bootstrap grid system and bootstrap modules
4	**Front end dev tools** Every application designed for optimization needs to be tested and debugged. We will uncover the hidden workings of the Google Dev tools.	1. Debug link tags utilizing the Dev console 2. Analyze the applications beginning wire frame
5	**Media optimization** Most images/videos are extremely costly to render on a server. We will learn the techniques and tricks to optimize this media fit for production	1. Develop a conceptual understanding behind pixelization

practicalProgramming

2. Apply optimization media code fixes to the front end of an application

Week 2 - Javascript development

Day   Overview   Students will be able to...

6   Javascript data types + Fundamentals

In the beginning of dynamic coding languages, one must develop mastery behind the Javascript building blocks. On our first day, we will develop a core understanding behind working with the web's most powerful language

1. Assess the seven core Javascript data types of Javascript
2. Analyze the history and progression of the Javascript language
3. Apply JS data types to algorithms

7   Introduction to algorithms

To gain a higher understanding, we will delve into applicative use cases for the Javascript language by solving real world problems.

1. Work with functions and variables to gain an understanding to JS development
2. Apply algorithm strategies to create solutions in JS

8   Applied algorithms (Day 2)
Students will work with other classmates and alongside the instructor to develop a bigger understanding to more complex Javascript algorithms.

1. Utilize the whiteboard to solve more complex algorithms
2. Apply JS code to create optimized solutions to Javascript problems

9   Introduction to NODE

At this point, you will be ready to work with one of Javascripts most popular features...NODE!! Node allows us to create full stack applications using ONLY Javascript!

1. Create simple Javascript applications outside the web browser
2. Explain the flow of Node events to uncover how Node works

10   Introduction to Backend Development
(Node Wireframing)

We will discuss the flow of how all Node applications work and develop code along the way. This is where your application starts to become alive….

1. Develop an understanding behind the Express JS framework to the web application
2. Create wireframe of backend code that will connect a front end to a back end

Week 3 - Application development

Day	Overview	Students will be able to...
11	**React (Day 1)** The world of front end development has gotten on board with the Node runtime environment to create some of the most optimized JS code packages for client side code. Welcome to React.	1. Assess the importance behind React 2. Develop a React app utilizing the create-react-app Node package 3. Analyze the importance behind component based architecture
12	**React (Day 2)** The goal is to take the code development in week 1 and apply this to a React application.	1. Analyze the difference between State VS Props 2. Optimize previously written code by incorporating it into a React application
13	**Route handling (Front + Back end)** Students will work with other classmates and alongside the instructor to develop a bigger understanding to more complex Javascript algorithms.	1. Analyze the user client flow with React Router 2. Analyze the backend flow with Express
14	**Database architecture (Mongo)** At this point, you will be ready to work with one of Javascripts most popular features...NODE!! Node allows us to create full stack applications using ONLY Javascript!	1. Create a simple database utilizing Mongo 2. Create a simple wireframe that will connect the client to the server to the database
15	**Application development and presentation** We will discuss the flow of how all Node applications work and develop code along the way. This is where your application starts to become alive….	1. Explain the development process over the course of three weeks 2. Review the concepts developed