Frontend (HTML, CSS, JavaScript) Web Development

The Cutting Edge Front-End Stack!

Bootcamp Curriculum

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Bootcamp Overview

Target Audience
This course is designed to alleviate the beginners/novice web technologies learning curve and to increase productivity.

Prerequisites
- No prior experience required!
- Basic computer skills required.

Duration:
- 12 Weeks (15 weeks)
- Mon-Fri 9am-12pm (Mon-Sat 6PM-9pm-9pm-EST)

Format
- Live hands-on instructor sessions including recorded sessions
- Hands-on assignments and real-world projects
- Ongoing support and mentorship
- Ongoing access to recorded lectures

Overview
At the end of the bootcamp, participants will master key frontend technologies and will be able to design and develop responsive and accessible web applications using the latest JavaScript libraries and frameworks, and a responsive CSS framework (Bootstrap), with the tools and knowledge to deploy a production ready application.

Outcomes
Upon successful completion of the bootcamp, participants will present their capstone project to their instructors and receive a certificate from a Tech Bootcamp.

Learning Modules

The following modules have been designed to take you through the essential concepts and practices of modern web development, including the latest HTML5 features and a deep dive into JavaScript. Hands-on projects and exercises will be used to reinforce the concepts and skills learned in each module.

Module 1 Coming Started With The Web

- **Introduction to Web Development** Brief overview of what web development is and what it takes to be a web developer.
- **The Manual Path: Web Development Without Tools** Learn how to write and deploy a simple website using only a text editor and a web browser.

Setting Up Development Tools
- **Text Editors** Learn how to install, set up, customize and leverage powerful text editors such as Sublime Text, Atom, Visual Studio Code, Brackets, Vim, and Emacs.
- **Command Line Tools** Learn how to use command line tools such as Terminal, iTerm, Cmder, Hyper, and Cygwin.

Planning Your Website
- **Planning Your Website** Understanding the structure and purpose of your website, and how to plan for its design and development.
- **Mockup with Pixel** How to do simple mockups in a web project (HTML, CSS, Javascript) using Pixel Mator.

Mon-Fri 9am-12pm (Mon-Sat 6PM-9pm-EST)

Learning Modules

Module 2 Web Fundamentals

- **Web Basics**
- **Client-Server Model** Understanding the client-server model, and how browsers, servers, proxies, and DNS work together to deliver a web page.
- **Web Protocols** Understanding the structure and purpose of HTTP and HTTPS, and how to use them.
- **Web Standards** Understanding the purpose of web standards (e.g. W3C) and how to adhere to them.

Publishing Your Website
- **Publishing Your Website** Step-by-step guide on how to publish a website (GitHub Pages, Netlify, Amazon S3, Google Cloud).
- **Publishing with Pixel** How to do simple mockups in Pixel (Mac OS) and publish to GitHub Pages.

Mon-Fri 9am-12pm (Mon-Sat 6PM-9pm-EST)

Learning Modules

Module 3 INTRODUCTION TO HTML

Introduction to HTML
- Understanding the role of HTML in the composition of web development.
- Differences between HTML, CSS, and JavaScript in terms of web page composition and web application development.

"Beginners" and the world of commenting web pages (tips and tipsters)

HTML Syntax and Elements Introduction to HTML Syntax and Elements
- Understanding the syntax and structure of HTML.
- Creating your first HTML document.
- Code beautifying (VS Code, Sublime Text, Atom, Brackets, Dreamweaver).
- Understanding elements and attributes.
- Understanding the difference between block and inline elements.

Multimedia and Embedding
- Embedding images, video, and configuring attributes (e.g. alt text).
- Embedding audio and configuring attributes (controls, autoplay, loop).
- Embedding other content (e.g. iframes).

Forms
- Creating forms and configuring attributes (action, method).
- Building forms with elements like <form>, <input>, <textarea>, <select>, <button>.
- Form accessibility and special attributes.

Advanced HTML Techniques
- Using HTML5 Semantic Resource Drawing with images and media.
- Accessing content with "id" and "class" and configuring attributes.

Best Practices and Problem Solving
- Tips and tricks for HTML and problem solving.
- Debugging with google chrome.
- Structuring HTML for accessibility and readability.

Mon-Fri 9am-12pm (Mon-Sat 6PM-9pm-EST)

Learning Modules

Module 4. Introduction to CSS

CSS ESSENTIALS FOR STARTERS
- Understanding the role of CSS in the world of presenting HTML website.
- Understanding the three ways given to use using CSS. Inline or Cascade or Linked CSS file. Link to an HTML document, and style it.
- Understanding the syntax of CSS. Selector, Property, Value. Understanding the composition of CSS rule with selectors, declarations, properties, and values.
- Understanding the different types of selectors: Element, Class, ID, Universal (paragraphs, headings, etc).
- Understanding the Cascade and Inheritance CSS Choose from the many ways to target an element. Understanding the cascade and inheritance in HTML pages to see how they behave differently.

Mon-Fri 9am-12pm (Mon-Sat 6PM-9pm-EST)

Learning Modules

Module 5. CSS. Applications 01.

Text Properties
- Learning Element Line-height and Text-Align properties (text-align, line-height).
- Hands-on: Create an image and body content using Text-Align, Image-Align, and Display: block.
- Hands-on: Create a short about-yourself-paragraphs (Center, Left, Right, Justify).
- Hands-on: Create a Text Editing application (Text-alignment).
- Hands-on: Set a background-color and change the fonts settings.
- Hands-on: Create a Text Editing application (Text-alignment, Text-Decoration, Text-Transform).
- Properties to learn: Learn how to control element/text/image/text-alignment positioning with "width", "height", "padding", "Margin", and "border".

Text Properties
- Hands-on: Create a Text Editing application with color and image properties.
- Hands-on: Set a background-color and change the fonts settings.
- Hands-on: Create a Text Editing application (Text-alignment, Text-Decoration, Text-Transform).
- Hands-on: Add different sections of a webpage with containing text-editing (Text-Alignment).

Mon-Fri 9am-12pm (Mon-Sat 6PM-9pm-EST)

Learning Modules

Module 6. CSS. Applications 02.

Text Properties
- Learning Element Line-height and Text-Align properties (text-align, line-height).
- Hands-on: Create an image and body content using Text-Align, Image-Align, and Display: block.
- Hands-on: Create a short about-yourself-paragraphs (Center, Left, Right, Justify).
- Hands-on: Create a Text Editing application (Text-alignment).
- Hands-on: Set a background-color and change the fonts settings.
- Hands-on: Create a Text Editing application (Text-alignment, Text-Decoration, Text-Transform).
- Hands-on: Add different sections of a webpage with containing text-editing (Text-Alignment).

Text Properties
- Hands-on: Create a Text Editing application with color and image properties.
- Hands-on: Set a background-color and change the fonts settings.
- Hands-on: Create a Text Editing application (Text-alignment, Text-Decoration, Text-Transform).
- Hands-on: Add different sections of a webpage with containing text-editing (Text-Alignment).

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Learning Modules

Module 7 Introduction to JavaScript

Web Scripting
- Understanding what a web page JavaScript is and why it's important in web development.
- Understanding the role of JavaScript in web development and how it works with CSS to create dynamic websites.
- Understanding the syntax of JavaScript. Learn "log" and what it does to place JavaScript code in an HTML document.

JavaScript Syntax and Fundamentals
- Understanding the syntax of JavaScript and "let" and "const". Understanding the difference between "let" and "const" and when to use "let" and "const".
- Operators: Explore mathematical operators (+, -, *, /, %, ++, --).
- Operators: Explore "+" and "+=" and "-" and "-=" operators.
- Comparisons: Learn "<", "<=", "==", "!=", ">", ">=".
- Conditionals: Learn "if", "else if", "else" and how to use them.
- Functions: Learn how to write functions, call parameters and return values.
- Functions: Learn how to write functions, call parameters and return values in JavaScript and the concept of Scope.

Mon-Fri 9am-12pm (Mon-Sat 6PM-9pm-EST)

Learning Modules

Module 8. ADVANCED JAVASCRIPT: DATA, ARRAYS, AND CONDITIONALS

Web Concepts
- Arrays: Learn how to create, manipulate, and loop through arrays with "push", "pop", "length", "for", "for-in", "for-of", "forEach".
- Objects: Understand how to define objects, access their properties, and manipulate them.
- Conditionals: Understanding conditionals and boolean logic.
- **DOM Document Object Model:** Understand how JavaScript interacts with HTML and CSS through the DOM. Learn how to use the DOM to select and manipulate elements on a webpage and handle events.
- **Event Handling:** Use "click", "select", and "hover" to manage events in your code.

Functions
- Functions in Functions
- Built-in Arrays (sort)

Mon-Fri 9am-12pm (Mon-Sat 6PM-9pm-EST)

Learning Modules

Module 9. ADVANCED JAVASCRIPT: DOM AND REFORM

Web Concepts
- **DOM Manipulation:** Learn how to manipulate elements on a webpage using JavaScript.
- **Forms:** Understand how to create and use classes and attributes.
- **Forms:** Understand how to create and use classes and attributes.
- **Forms:** Understanding and using conditionals and boolean logic.
- **Forms:** Understanding and using conditionals and boolean logic.
- **Modules:** Understand the "import" and "export" functions and how to use them to organize your code into multiple files.
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Functions
- Functions in Functions
- Functions in Functions (Function.call, Function.bind, "forEach", "reduce") and how to use them.
- Functions in Functions (Function.call, Function.bind, "forEach", "reduce") and how to use them.

Forms
- Build a website using a public API and Promises or "async/await".
- Develop a web application.

Mon-Fri 9am-12pm (Mon-Sat 6PM-9pm-EST)

Learning Modules

Module 11. ADVANCE JAVASCRIPT AND APIS

Web Concepts
- **Cookies:** Understand how to use cookies functions.
- **Local Storage:** Understand how to use local storage functions.
- **Fetch Basics:** Write client side functions using "async" and "fetch".
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Functions
- Build a simple web app that fetches data from a REST API (e.g., Backing Apps).
- Use Promises or "async/await" to handle API data.

Mon-Fri 9am-12pm (Mon-Sat 6PM-9pm-EST)

Learning Modules

Module 12. Javascript Frameworks and Libraries

Introduction to Libraries
- **Introduction to Libraries** Learning Outline for DOM transformations (through JS) into complex custom components.
- **Learning Outcomes** Practicing using jQuery libraries.
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Introduction to Frameworks
- **Introduction to Frameworks** Learning Outline for DOM transformations (through JS) into complex custom components.
- **Learning Outcomes** Practicing using jQuery libraries.
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- **Other Libraries** Get familiar with Dip Dip data visualization and Threejs 3D graphics.
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Bootcamp Overview and Reference Guide

Resource Recommendations

Bootcamp Deliverables
- Hands-on assignments, real-world projects, and frontend development-related tasks and exercises.
- Frontend development-related tasks and exercises.
- Front-end/web-application projects progressing over six-week sprints.
- Resume and LinkedIn optimization.
- Mock interviews and interview preparation and guidance as well as scheduling tips.
- Job-search strategies and tips.

Learning Resources
Online resources

Online Resources
Resources online resources are available exclusively to bootcamp participants.