HyperionDev

Full Stack Web Developer

BOOTCAMP SYLLABUS

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Overview

You're here because you want to learn the skills needed to become a world-class web developer. Or perhaps you're coding already, and want to take your career to the next level. Either way, you've come to the right place. This bootcamp equips you with the skills needed to build dynamic, data-driven and career-boosting web applications using the most cutting edge and popular web development tools in the market today.

Learn to develop dynamic web applications using:

HTML	CSS	JavaScript	MongoDB
Express	React	Node.js	Next.js

among many other industry-relevant web development technologies.

That sounds great, but is that all you're going to get from this web developer bootcamp? You'll learn far more than merely how to work with different technologies. Throughout the bootcamp, you learn how various technologies and devices interact to make full-stack web applications work like clockwork. You're taught professional approaches to product design, along with the best practice guidelines needed for implementing software development projects.

Expanding Your Web Development Horizons

Throughout the bootcamp, you're introduced to more than one development framework and different approaches to web development. In addition to all of this, you're introduced to computer science algorithms, and how they're used in web development to produce world-class results.

This bootcamp helps prepare you for interviews and job applications. As you work your way through the programme, you will complete a series of capstone projects to demonstrate your powerful development skills to future employers, or for building your own online business.

The Process

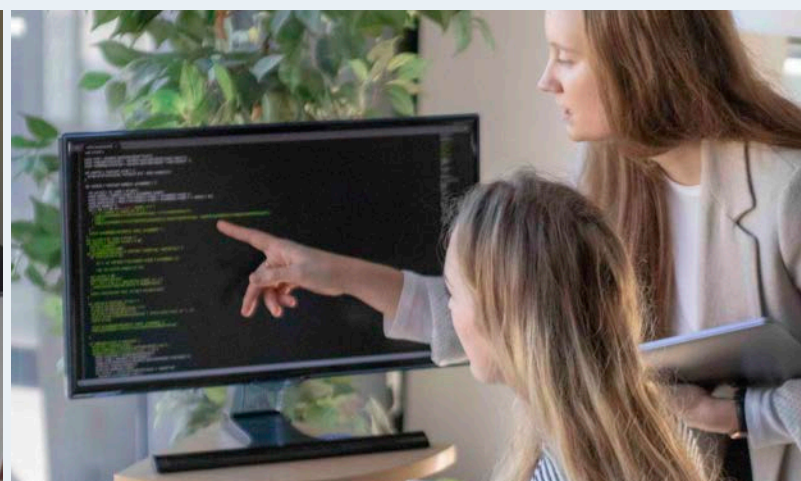| STEP 1	STEP 2	STEP 3	STEP 4	STEP 5	STEP 6
Get paired with an expert mentor	Complete coding exercises online	Your mentor reviews your work within 48 hours	Perfect your coding over 3-6 months	Create a portfolio, hone your CV, interview prep	Begin your new career in tech

Outcomes of the bootcamp:

- ✅ Learn HTML, CSS, JavaScript, MongoDB, Express, React, Node.js, Next.js.

- ✅ Develop and design dynamic web applications using various technology stacks.

- ✅ Apply agile development and product design principles to web development projects.

- ✅ Understand crucial software algorithms and their application to web development.

- ✅ Create databases and data-driven web applications.

- ✅ Become job-ready with our career support team that guides and prepares you for the tech career you're aiming for.

Mentors powered by CoGrammar

Our mentors are expertly trained by CoGrammar, the only company that sources, trains and integrates code reviewers into the lives and bootcamp curriculum of our students. The code review method helps our students become fluent in the language of their choice.

Our 1-on-1 code review centric approach works

Code review enables you to learn to code the right way through mastery of deeper aspects of software development that are a prerequisite for a career in coding. We help you master the deeper aspects of industry-level development and set the foundation for a lucrative career in coding.

Here's why learning through code review is smarter

Don't make the same mistakes as computers

✓ Automated code checking is like spell check for computer programs. But you can't write a world-class essay with just good spelling — you need the right tone, facts, grammar, and style. Only human review of your code can help you learn aspects of coding that are analogous to tone and style that will make you truly fluent as a developer — automated graders just can't help you learn this!

Get unstuck with professional technical help

✓ Your mentor will ensure you move at a steady pace by helping you debug your programs within 48 hours. Your mentor will help you debug your programs and move forward so you never drop out.

Be exposed to the industry standards from day one

✓ Developers in the real world have their work assessed by a senior developer through the technique of code review. We're the only bootcamp in the world that exposes our students to this technique from day 1 so you get an unfair advantage in the job market.

We layer a proven 1-on-1 personalised mentorship approach over our code review.

Industry experts tailored to your goals

✓ You'll be paired with an experienced mentor who will guide you through 1:1 calls, career coaching, and live chat and email support.

Join a community of career-changers

✓ Learn as part of a cohort of students all working towards ultimate career fulfilment. Join online group tutorials, community chats and meetups, and peer coaching.

Free of fear of failure

✓ 1-on-1 mentoring builds trust with your mentor and lets you progress at your own pace. Establish a safe space to discuss any roadblocks without fear of failure.

Why web development?

The World Wide Web has become ubiquitous. More than three billion people access it daily, with the number growing. Web developers remain highly sought-after, and their importance to the IT world shows no signs of waning. Aside from the social construct of the web, companies of all shapes and sizes find themselves at the mercy of the internet. They depend on web developers to help them carve out a piece of digital real estate that keeps them relevant in today's digitised economy.

With the ever-increasing proliferation of online applications, the demand for skilled front-end and back-end web developers has grown greater than the number of people who possess those skills. This makes web development a competitive and lucrative career economy to break into. Even if you don't wish to become a web developer, familiarising yourself with the basic skills and languages used in web development is a valuable tool in any software developer's skillset.

According to Indeed, US web developers can expect to make an average annual salary of $78,631, ranging from $38,219 to $84,855. Web developers can look forward to high-growth potential in this industry, with the U.S. Bureau of Labor Statistics estimating around 130,000 web developer jobs being added to the economy, with a 15% growth over the course of the next ten years.

How we get you hired

We're with you every step of your journey, and our support doesn't end when you graduate. Our career services are developed to help you stand out from the crowd, and grab the attention of top employers.

Technical CV and portfolio

Receive technical assistance in getting your CV industry-ready according to accepted best-practice format.

Bootcamp certificate

Walk away with a newly minted certificate as evidence of your skills and expertise in software engineering.

Interview preparation

Know what to expect when getting ready for that big interview with expert interview preparation from professionals who have been where you are.

Join our hiring network

We work with select hiring partners and aim to place our students in new jobs within six months of graduating. There are also internship placements available with select partners.

Career Paths

Back-end Developer

This highly coding-intensive job requires you to both write code and understand the system you're working on. Some of the key competencies of this role include:

- Setting up the server for the web application and maintaining it. This demands proficiency in the operating system that's installed on the server.

- Deploying software in the cloud computing environment, and maintaining the deployed software.

- Developing features that require close integration with databases.

- Developing an API to expose functionality to other applications.

- Developing new web pages and maintaining the code of old ones.

- Continuously exploring new web technologies and frameworks.

Average Salaries

According to Glassdoor.com, the average US salary for back-end developers is $88,488/yr, with highs and lows ranging from $56,000 to $128,000/yr.

Front-end Developer

Thanks to the growing use of JavaScript, front-end development has also become coding-intensive. The introduction of front-end frameworks like React and Bootstrap makes it easier, but product managers continue to demand new and complex features, which require a mastery of JavaScript.

Responsibilities of a front-end developer include:

- Using JavaScript and Ajax calls to implement client-side functionality.

- Implementing user experience features suggested by experts.

- Creating unique looks for web applications by developing CSS with graphic designers.

- Exploring and implementing emerging front-end web technologies.

Average Salaries

According to Glassdoor.com, the average US salary for front-end developers is $88,680/yr, with highs and lows ranging from $61,000 to $118,000/yr.

Full Stack Developer

Full stack developers are able to delve into their comprehensive understanding of both front-end and back-end web development, empowering them to design software solutions to real-world problems. This role combines the skills of front-end and back-end development and makes the full stack developer an invaluable addition to any company's team.

Average Salaries

According to Glassdoor.com, the average US salary for full-stack developers is $88,488/yr, with highs and lows ranging from $56,000 to $128,000/yr.

UX Designer

Not everything about web development revolves around writing code. There are professionals who specialise in crafting the look and feel of web applications, analysing it from the user's experience when they're on the website.
 This role includes:

✓ Enhancing the user experience by coordinating with front-end developers and graphic designers to implement client-side features.

✓ Defining a design language of theme for the web application.

✓ Translating the brand into the web application.

Average Salaries

According to Glassdoor.com, the average US salary for UX Designers is $97,460/yr, with highs and lows ranging from $69,000 to $120,000/yr.

Breakdown of the syllabus

Our online coding bootcamp helps you progress from learning the basics of web development to becoming a full-stack web developer, with an exciting career. Advance from a beginner to an advanced level, and get started on the career path you want:

Bootcamp prep

Here is where you get to learn about the software development industry, and how Hyperion-Dev supports you in achieving your development goals. Explore working with HTML and CSS, and get a taste of what web development involves, making you more prepared to commit to the Full-Stack Web Developer Bootcamp.

Web Development Essentials

An introduction to web programming using HTML, CSS, JavaScript and JQuery. Learn how to build websites that your user can interact with, such as online blogs and events applications. Develop an online store in your capstone project by the ed of this level.

Web Development with React and Express

An introduction to web programming using HTML, CSS, JavaScript and JQuery. Learn how to build websites that your user can interact with, such as online blogs and events applications. Develop an online store in your capstone project by the end of this level.

Full-Stack Web Developer

Learn full-stack JavaScript development using the popular MERN stack, and become competent in algorithms and software development process best practice. Compile the web applications that you have developed in this bootcamp into an online portfolio that showcases your newly minted skills.

Interview and getting hired

After graduation, receive career support and guidance in the form of interview preparation, CV review, direct referral to our hiring partners, and possible internship placement at select hiring partners. Most of our graduates move into a new career within six months.

Structure of the Bootcamp

The bootcamp is structured to allow you to start coding as soon as possible. Tasks are designed to:

1 Teach you the theory needed to develop your skills.

2 Give you the platform to practise implementing your new knowledge by completing one or more practical activities.

Remember, with HyperionDev, you're never alone. You can contact your mentor for 1:1 support whenever you need help with a task. The code you submit for each task is reviewed by your mentor who is an industry expert, to help improve efficiency and quality of code.

Web Development Essentials

Tasks: 15
Capstone Projects: 2

	Tasks	Description
1	Introduction to HTML	Create your first HTML page! Learn what HTML is. This task also introduces HTML elements, tags and attributes. Titles, paragraphs, and headings are also discussed, as well as how to define ordered and unordered lists.
2	Introduction to Web Development	Learn what the web is. To write programs that run on the web, we first need to grasp what it is, and how people interact with it.
3	HTML II	Learn how to make links to other web pages and add multimedia to an HTML document. HTML tables and HTML forms are also explained in this task. The span and div tags are discussed.
4	Introduction to CSS	This task explains what CSS is and how it is applied to HTML. It also discusses selectors, properties and values, as well as colours and text. Margins, padding and borders are also discussed.
5	CSS II	This task explains class and ID selectors and how to define your own selectors. Grouping and nesting, pseudo classes, and page layout are also explained.
6	CSS III: Build attractive pages faster using Bootstrap	Learn how to style like Twitter does.
7	Capstone Project I: Create an online store using HTML and CSS	Create an attractive online store using HTML and CSS.
8	Programming fundamentals using JavaScript I: Variables and operators	This task explains what JavaScript is and how it relates to HTML and CSS. It also discusses variables and arithmetic operators.
9	Programming fundamentals using JavaScript II: Conditional statements and looping	Learn to extend the functionality of your website by using conditional statements and looping.
10	Programming fundamentals using JavaScript III: Scripting and event handling	In this task, learn how to create JavaScript functions that handle events on your HTML pages.

	Tasks	Description
11	**Programming fundamentals using JavaScript IV: Arrays**	This task gives a brief introduction creating and manipulating arrays in JavaScript.
12	**Programming fundamentals using JavaScript V: OOP**	This task introduces the concept of object-oriented programming.
13	**Programming fundamentals using JavaScript VI: JSON**	Learn how JSON and the Web Storage API are used to facilitate communication between the client and web server.
14	**Introduction to jQuery I: Write less, do more**	A brief introduction to the popular "Write Less, Do More", JavaScript Library.
15	**Capstone Project II: Make your online store interactive using JavaScript**	Create an interactive online store using JavaScript. Implement a "shopping cart" for your online store.

Web Development with React and Express

Tasks: 21
Capstone Projects: 2

	Tasks	Description
1	**Introduction to full-stack web development**	Get to grips with some key concepts in full-stack web development including Server-side rendering (SSR), Client-side rendering (CSR), Single-page applications (SPA) and how a browser actually works.
2	**The command line for web development**	Learn to use the command line for web development. Learn basic commands and functionality used with the command line.
3	**Introduction to version control**	Learn what version control is, what Git is and how to install Git.
4	**Git basics for version control**	Explore how to set up a repository for a new or existing project, use common Git commands, commit a modified file, view your project's history and branching.
5	**Build your brand I**	Use GitHub to start building a portfolio of work that you can share with others to showcase your skills.
6	**Build your brand II**	Showcase your personality, creativity and development skills by creating a personal website. Make this website available to the world using GitHub pages.
7	**Advanced JavaScript**	Understand advanced concepts that make JavaScript different from other programming languages including the Event Queue and Asynchronous Processing.
8	**ReactJS I: Introduction to ReactJS**	This task introduces ReactJS (a JavaScript library for building user interfaces) and guides you through setting up your environment and creating React Elements using JSX.
9	**ReactJS II: Components**	This task introduces the most important concept when using ReactJS: components.

(10)	**ReactJS III: Events**	Learn how to create React applications that respond to events.
(11)	**ReactJS IV: Managing state**	Learn about states and how to make React components more dynamic.
(12)	**Capstone Project I: Create a ReactJS app**	Create a game using React to showcase your mastery of the ReactJS concepts introduced so far.
(13)	**Deploy a React app**	Deploy your app to Heroku to your work with the world!
(14)	**ReactJS V: Fetching data**	Fetch data from a remote source using React.
(15)	**ReactJS VI: Testing a React app**	Learn to write tests for your React application using Jest.
(16)	**Introduction to Node.js**	Install Node.js. Learn what Node.js is and the advantages of using it. Use existing Node.js modules (HTTP module and File modules) and create Node.js modules.
(17)	**Express web framework I**	Introduction to Express, the fast, unopinionated, minimalist web framework for Node.js.
(18)	**Express web framework II**	Learn to use Express' routing and application-level middleware.
(19)	**Full-stack with React and Express**	Learn how to get React to interface with your Express back-end.
(20)	**Testing and refactoring Express**	Learn the importance of using test-driven development. Learn how to use popular testing frameworks.
(21)	**Capstone Project II: ReactJS**	Create a full-stack web application using Next.js and Express.

Full Stack Web Developer

Tasks: 22
Capstone Projects: 2

Tasks	Description
1. Build your brand III	Create or update your LinkedIn profile to connect with a network of professionals and let people know about your skills.
2. Introduction to Agile Development Process	Learn the importance and benefits of using an Agile Development Process.
3. Approaches to web development	Learn design patterns like MVC and see how these patterns are implemented with the MERN stack. Compare various frameworks for web development.
4. Introduction to databases	Compare relational, graph and NoSQL databases.
5. Getting started with MongoDB	Create a MongoDB database using Atlas - MongoDB's Database as a Service solution.
6. Database interaction	Learn how to use Mongo (MongoDB's administrative shell) to create databases and collections. You will also learn to create, read, update and delete documents from collections.
7. Database interaction 2	Use Mongoose (a library that sits on top of the MongoDB driver) to write your own CRUD operations.
8. Build your brand IV	Join the HyperionDev Careers community to make yourself visible to Hyperion hiring partners.
9. Authentication with Express apps	Learn to use Passport.js: the authentication middleware for Node.js
10. Next.js I	Create a web app using Next.js: The React Framework for server-rendered apps. Navigate between pages and share components using Next.js.
11. Next.js II	Create dynamic pages with Next.js.
12. Next.js III	Learn what it means to create an app with a serverless architecture. Deploy your Next.js apps with Zeit Now.
13. Define your product	Consider best practice guidelines for defining product - including gathering and documenting system requirements. Introduce UI/UX design guidelines and tools such as wireframing, prototyping and use cases.
14. Capstone Project Part 1: Define your product	Conceive, plan and design your final full stack web application for this Bootcamp.
15. Capstone Project Part 2: Develop full-stack MERN application	Create a data-driven website using React, Express and MongoDB.

16	**Analytics concepts**	Use Google Analytics to gather information about how your web application is being used. Learn how to use Data points, Segmentation, Funnels and Cohorts for data analysis.
17	**Build your brand V**	Get some pointers for a successful technical interview and connect with your HyperionDev Careers team to arrange a mock interview.
18	**Interview Preparation I: Concurrency**	Understand what concurrency is and what approaches to concurrency control would you recommend? Understand why is concurrency not a major issue with Javascript?
19	**Interview Preparation II: Big O Notation**	Introduction to Big O Notation. Explain how Big O Notation is used to describe the performance of algorithms.
20	**Interview Preparation III: Interfaces**	What are interfaces? What are the advantages of using interfaces? How are interfaces implemented using JavaScript? What are the pros and cons of this approach?
21	**Interview Preparation IV: Hashing**	Explain what hashing is and how it is used to access data quickly.
22	**Build your brand VI**	Make your mark by ensuring that all components of your online presence related to your professional brand are finalised.