NORTH CODERS

<Northcoders Curriculum />

> "For every reason I had to doubt myself, Northcoders gave me a reason to believe in myself and empowered me to make that change for myself and my family"

Nathan, May 2018

<A Day On Our Bootcamps />

08:30 - 09:30: Kata hour

We kickstart every day with a new problem. You have an hour to settle down, sip your coffee and solve a technical challenge. The katas develop your problem solving skills, hone your core JavaScript and wake you up!

09:30 - 11:00: Lecture/Workshop

Our lectures are not like university. We introduce a concept that builds on your existing knowledge base, and use it throughout the day. We ensure any theory is relevant, and directly informs your practice. We encourage collaboration, questions and curiosity. We solve problems together and reinforce understanding.

11:00 - 17:00: The Sprint

Like in many developer roles, the bulk of our students' days revolve around sprints. These are mini projects, designed to put your new skills into action and stretch your understanding. They last either 1 or 2 days. We tend to work in pairs during sprints, as it's a great way to teach and be taught by others. Students are often amazed what they can achieve in these short periods of time.

17:00 - 18:00: The Solution

We cap off our days with a solution lecture, where we explore the pain points students have experienced over the course of the sprint. These sessions vary. Sometimes lecturers will share their code, or do a live session to show how they would have approached it. For the more creative sprints, we end the day with a show-and-tell and give everyone the chance to share their ideas and processes.

"This course is the full package for someone wanting to change career and land job as a Software Developer"

Marta, May 2018

<Career Support />

Career Development Support

Companies don't just recruit based on technical skill. Today, Northern businesses look at candidate fit, cultural fit and business awareness. This is why we don't just focus on your technical skills, but ensure you are 'industry ready' and 'career ready' by the time you graduate.

We provide one-to-one career support with a talent expert.

The one-to-one training covers topics around:

> Self-awareness - helping you to understand your own personal strengths and how to apply these in development teams.

> Goal-setting.

> Understanding the technical landscape and technical trends.

> CV support.

> Mind mapping and interview techniques.

> Advice around applying for work.

Arranging Interviews with our Hiring Partners

You tell us what kind of job you're looking for, and we'll arrange interviews for you with relevant employers in our large Hiring Partner network.

You'll get one-to-one, tailored and highly personal support after you've graduated to ensure you find the right job for you.

We'll help prepare you for interviews with interview practice sessions, code reviews and support for all stages of the hiring process.

We do everything we can to ensure you find work within weeks after graduating. That's the thing about becoming a Northcoder. From the moment you join us, we've got your back. You never stop being a Northcoder.

"I will remember the time spent at Northcoders for the rest of my life - it is not only about coding, but is also about the friends you make"

Radu, June 2018

<Curriculum />

Fundamentals

In this block we will study the foundations of Javascript and Node that serve as an underpinning for the rest of the course - and your career. This block, as with those that follow it, places a strong emphasis on on best practices, simulating the environment of our partner companies from day one. Alongside all of this, students will work independently on katas (problem solving exercises) - critical for building solid problem-solving skills in the day-to-day business of coding.

Topics Include:

> Test-Driven Development
> Pair programming
> Debugging
> Version control with Git
> Functional programming
> Recursion
> Object-oriented programming
> Scope, closure and hoisting
> The event loop
> The call stack
> Execution contexts
> Understanding Asynchronous Code
> Callbacks
> Asynchronous Code with Promises
> Node.js and its Core Modules

Example Sprint:

Building a Pokemon-inspired command line gameline game
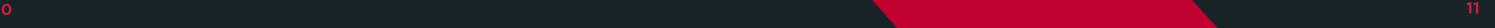
Back End

JavaScript is the only programming language that runs on both servers and browsers! In the Back End block, we teach you everything you need to know about how web applications work on the server side. We begin by learning to build servers, getting familiar with the HTTP protocol and learning about typical API architecture. We introduce postgreSQL and SQL as a way of effectively storing and managing data. Finally we'll build our own fully-tested API using Knex - a library for building SQL queries in JavaScript.

Topics Include:

> Building servers with Express
> HTTP Servers
> SQL
> Introduction to PSQL
> RESTful API design and testing
> CRUD operations
> Web Servers with Express
> Crawling the Web
> Complex queries with PSQL
> Hosting databases
> Database migrations
> Complex error handling
> RESTful API design and testing
> Knex
> Server Side Rendering with EJS
> MVC Architecture
> Deploying apps with Heroku

Example Sprint:

Building a Game of Thrones Wiki

Front End

Here we learn about the inner workings of the browser - what actually happens when a page is loaded and displayed on our computer! We'll start by using vanilla JavaScript and the DOM for web page interactivity, before introducing React. We'll begin with simple apps to learn the basics, and move towards feature-rich web applications. As the most in-demand front-end library you will get the opportunity to explore lots of interesting cutting edge features. At the end of this block, you will use React to build a front-end using the data provided by one of your major back-end projects.

In this block we cover all the fundamentals of modern front-end development, in keeping with industry demand. Starting with simple tiny apps to learn the basics, we move towards feature-rich web applications that talk to the servers you built during Back End block and 3rd Party APIs like Twitter, GitHub or IBM Watson.

Topics Include:

> The DOM and Web APIs
> Semantic HTML
> Responsive CSS
> Introduction to UX
> React
> Peripheral React technologies
> React-Router
> Lifecycle Methods
> Advanced React
> Front-end testing frameworks
> Routing

Example Sprint:

Pixel-perfect Twitter clone (using Twitter's API)

Project Phase

After the opportunity to pitch a project, students group together in teams and spend 3 weeks working on a full-scale project. The subject matter and the technologies used in these projects vary wildly! Students get the opportunity to show off their skills and learn some new ones. Project phase ends with a presentation to your peers, beers and graduation! Students follow common workplace practices such as Agile, Kanban and advanced Git to simulate a real working environment. Depending on students' choices of projects, we provide tailored support from our lecturers who are knowledgeable on a range of languages and technologies.

Example Projects:

> Blockchain voting solution
> Fake news-busting Chrome extension
> Bookshelf reader, taught to recognise books with machine learning
> Augmented reality educational game
> Smart mirror technology
> Alexa rap battle bot

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