



# DEV ACADEMY TE KURA HANGARAU O AOTEAROA

## Dev Academy Aotearoa

Dev Academy Aotearoa was established in 2014 by a small team of people who shared a common vision. Imagine Aotearoa, New Zealand as the tech capital of the South Pacific - a country no longer reliant on agriculture and tourism, but thriving as a result of bright and passionate technologists and innovators who are leading the way in creating weightless exports and exquisite livelihoods.

Dev Academy is committed to contributing to a technology sector that looks more like the world that it serves. We work hard to create an intensive, immersive learning environment that is safe and empowering for people regardless of their gender, sexuality, ability, economic, or cultural background. Our Human Skills programme is designed to equip our students with the empathy skills and emotional intelligence to complement the high level of technical proficiency they learn with us. Above all else, Dev Academy is about cultivating a passion for learning and problem solving that will support a lifetime of discovery and adventure.

## Overview of Our Curriculum

The Dev Academy training consists of six weeks of online learning, which prepares students for nine weeks of intensive, immersive learning (in-person or online), followed by two weeks of careers training. All this is supported by online communication and resources. We operate three campuses: Auckland, Wellington and one that is completely online. Class sizes are kept small (typically 20-25 students) to maximise learning and support a strong team culture in each cohort.



## Foundations

Foundations is a learner-driven remote course that upskills and prepares students for the immersive bootcamp programme. It is designed to be undertaken full time over the course of 6 weeks. We combine a number of freely available online resources with additional exercises and curriculum, and structure them in a coherent sequence to provide a solid technical foundation.

At the start of Foundations, students are allocated a home group of 4 to 5 people who will be in the same cohort in the Bootcamp. We have home group meetings together, which starts building whanaungatanga so students are already forming relationships before Bootcamp. We also provide online support and regular scheduled check-ins with a Foundations Facilitator.

### Foundations consists of five sprints which cover:

#### Sprint 1

- Command line basics
- Git and GitHub
- Intro to Core material
- Values and Identity exploration

#### Sprint 2

- Intro to HTML and CSS
- Responsive design
- Git and HTML best practices
- Create a learning plan

#### Sprint 3

- The DOM
- Intro to JavaScript
- Combining HTML, CSS and JS
- Using Developer Tools
- Emotional intelligence

#### Sprint 4

- Problem solving techniques
- JavaScript data structures and algorithms
- Neuroplasticity and growth mindset
- How to search and ask for help

#### Sprint 5

- Managing user inputs
- JavaScript event handling
- Dynamic DOM updates

## Bootcamp

The main event for anyone going through Dev Academy is the nine week Bootcamp. Some people don't enjoy the metaphor but it's the best way we currently have of describing the intensive, immersive learning environment that we offer. It is also a way of acknowledging the support of the great people at Dev Bootcamp in San Francisco who supported us to get started here in Aotearoa New Zealand. The Dev Academy curriculum exceeds what most people think is possible to teach or learn in nine weeks. We create a highly supportive, highly challenging, and deeply holistic educational experience that makes it possible for our students to make major life and career transitions in a very short period of time.

### Phase 1

The primary focus of Phase 1 is server-side development. We start by ensuring everyone is close to the same technical level and then focus on learning server-side development and automated testing practices. By the end of Phase 1 students are building database-driven web applications with dynamic page rendering. These applications are capable of adding, updating, deleting, and displaying database data in dynamic pages built with a server-side templating language. These applications are also deployed to the web and capable of solving problems for real users.

#### Week 1

- Arrival
- Ensure everyone is on a similar level
- Recap JavaScript fundamentals (objects, arrays, functions, etc.)
- Test-driven development
- Internet and web fundamentals (HTTP requests/responses, DNS, etc.)
- Server-side development with Node.js and Express.js
- Team building and creation of working agreements
- Human skills: listening, empathy / aroha & trust

#### Week 2

- Server-side templating with Handlebars.js
- Filesystem access with Node's 'fs' module
- Asynchronous development using JavaScript callbacks
- Unit testing synchronous and asynchronous functions
- Reading and writing data to and from files on the server
- Exception management and HTTP status codes
- ES6 syntax (fundamentals)
- Introduction of group projects
- Human skills: oranga / well-being & stress-busting tools

#### Week 3

- Database development with SQLite3 and Knex.js
- Database operations (create, read, update, and delete)
- Database maintenance using migrations and seed data
- Data access patterns for web applications
- Asynchronous functions using Promises
- Data modelling entity relationships
- Human skills: self-compassion and internal dialogue

## Phase 2

In Phase 2 students are becoming familiar with the intensity and the culture of Dev Academy. Our technical focus transitions back to the browser and more modern web development architectures. We start by jumping straight into the React TypeScript library. After gaining some comfort with the new concepts, we begin to expose and consume web APIs that return JSON instead of rendered views. Finally, we improve the architecture of our frontend code by managing state with Redux. Phase 2 also has students presenting lightning talks and their personal projects.

### Week 4

- Introduction to TypeScript
- JSX syntax and building components
- Managing component state and handling events
- Client-side routing
- Transpiling and bundling client assets with Webpack
- Functional programming concepts
- Unit testing React components
- Building accessible forms in React
- Human skills: giving and receiving feedback.

### Week 5

- Building APIs
- Consuming APIs
- Invoking API routes with Postman or an equivalent HTTP client
- Consuming APIs with Superagent
- Testing API calls with Supertest
- Human skills: Agile development methodology

### Week 6

- Managing global state with Redux
- Coordinating multiple asynchronous operations and global state
- Coding patterns for larger code bases
- Presenting technical talks that include demos and code
- Human skills: navigating difficult conversations in the workplace

## Phase 3

By the time students get to Phase 3 they are increasingly self-directed and learning topics outside of the official curriculum. Phase 3 provides space for students to combine and begin to integrate what they've learned throughout the Bootcamp. We explore a few advanced topics and give them an opportunity to explore and present new technologies: languages, libraries and frameworks. Phase 3 also includes multiple multi-day projects and includes the fundamentals of Agile development tools and practices such as Scrum, Kanban, sprint planning, stand-ups, retrospectives and prioritising a backlog.

### Week 7

- Authentication and authorisation
- Auth strategies: JWTs and OAuth2
- More time using and testing React and Redux
- Human Skills: bias, diversity and inclusion in the tech sector

### Week 8

- Multiple, larger multi-day projects
- Modelling real-world dev teams with teachers in a Dev Lead role
- Begin final group projects
- Human skills: deep dive

### Week 9

- Building and presenting final projects
- Human Skills retrospective

## Human Skills

Our employers tell us that technical capability is only a small part of what they are looking for in a new hire. Of far greater importance is whether people can work well in teams, have good emotional intelligence, and want to continue to learn and develop. Workplace culture is essential for productivity and wellbeing. We cover a range of tools and techniques for cultivating mindfulness, mitigating bias, managing emotional triggers, bringing awareness to group dynamics as well as soliciting, giving, and receiving feedback. As shown in the outline above, we have a dedicated Human Skills session each week and practical exercises that are integrated into the technical sessions.

## Mahi Rapuara | Careers Skills

We pride ourselves on our ability to connect great employers with great graduates. We support every student in their job search until they find work – and in some cases beyond that, with mentoring and additional guidance. Our Careers Skills facilitators have decades of experience hiring and placing people in work.

In Week 1 of Careers Skills, you'll be in sessions 9am – 3pm, Monday to Thursday. You'll perfect your CV and cover letter, construct an authentic LinkedIn profile, and get coaching on how to tell your story in interviews or when networking with employers in the industry. We will also cover how to effectively job hunt and plan your career.

In Week 2, you can choose between a range of sessions with industry and alumni speakers, aimed at supporting different groups. These will typically be a few hour-long sessions per day or whole day sessions.

Attendance is mandatory and Careers Skills will be assessed.

## Culture

At Dev Academy Aotearoa we are serious about creating a safe, inclusive, supportive, and fun environment for our students, staff, and visitors. Our core values are Integrity, Kindness and Effort (IKE). Without these cultural 'pillars' in place we would not be able to achieve the learning outcomes that make Dev Academy unique.

We provide free yoga classes for our on-campus students and staff twice a week and facilitate a daily mindfulness practice each morning across all campuses.

We are deeply committed to encouraging more women and gender minorities, Māori and Pasifika, and other groups that have been systematically excluded from tech to take up careers in tech. We actively prepare our students to help them create safe, inclusive, supportive, and fun working environments throughout their careers.