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Digital School

DevOps Engineer Bootcamp Syllabus

A 20-week part-time course designed to help you **make the jump** into DevOps



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Bootcamp Overview

Purpose:

To provide the technical training, hands-on-experience, and optional career-change support to help you become a professional engineer in DevOps.

Who this is for:

This course is suitable for both beginners and those who are already IT professionals such as a System Administrators or Developers, who are seeking to upskill or transition into DevOps. The course will take you from little or no experience to operating at a professional standard.

How it's delivered:

This part-time programme runs 2 evenings per week (plus homework and projects) for 20 weeks. We simulate a work environment, which is run live by an experienced Lead Engineer in DevOps, taking you through a structured programme of applied learning, covering the core knowledge and skills required to become an Engineer in DevOps.

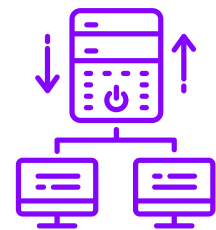


How we prepare you for the job

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We create an individual work environment for you, in which you'll create a simulated tech company where you're the lead Engineer in DevOps. You'll learn how to create end-to-end, automated processes, and implement them to enable your company to deliver reliable, scalable, and secure applications to users, faster.

This approach gives you both the knowledge and hands-on practical experience of being an Engineer in DevOps, and solving the challenges you'll face in an actual company.



Each student will have exclusive access to their own unique remote Virtual Machine from day 1 so you can practise what you've learnt straight away.



You will have access to a Google Cloud project once we start scaling your simulated business.

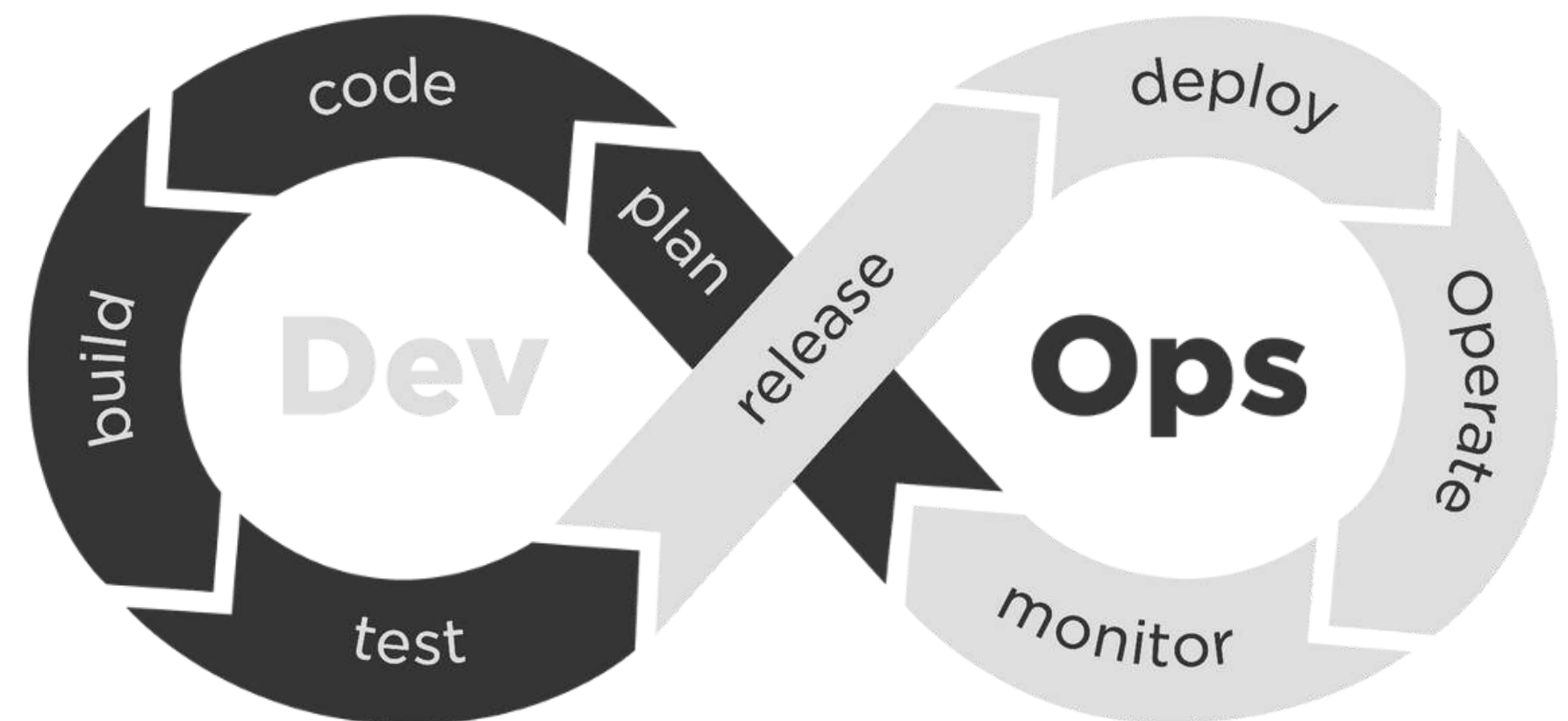


Each aspect of the training will simulate real world scenarios that are common in application development and deployment.

What is DevOps?

DevOps is a software development methodology (philosophies, tools, practices) for enabling the delivery of reliable, scalable and secure software to users, faster.

DevOps is built on Agile principles of automation and integration, but, critically, also integrates the **Developer** teams (that create applications) with the IT **Ops** teams (that deploy and run applications). **DevOps** now empowers organisations to standardise and automate the entire Development and Operations Life Cycle (shown on the right), using CI/CD pipelines (Continuous Integration/ Continuous Delivery) to make the whole process of delivering reliable, scalable and secure applications, faster.



The success of DevOps has led to a growth in the demand for Engineers focused on applying DevOps, and they're often referred to as **DevOps Engineers**, which is how we will describe the position in this syllabus.

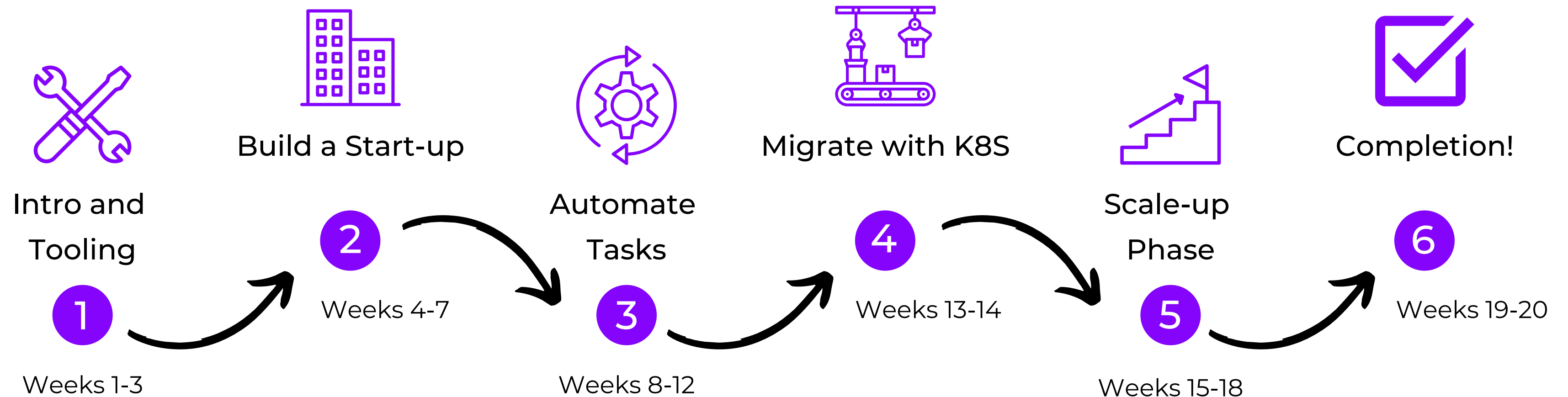
What do DevOps Engineers do?

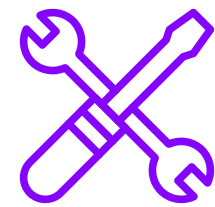
DevOps Engineers collaborate with the Dev and IT Ops teams in order to create, manage, and automate processes to enable software to progress through the Development and Operations Life Cycle, faster. Your tasks could be to:

- ✓ Create and manage **CI/CD pipelines** and tool chains
- ✓ Write scripts to **automate** parts of processes that are manual
- ✓ **Provision infrastructure** either on premises or in the **cloud**
- ✓ **Configure infrastructure** to support multiple tech stacks
- ✓ Implement an **Infrastructure as Code** approach to automate the provisioning process
- ✓ Configure and orchestrate **containers**
- ✓ **Monitor** apps for issues and performance
- ✓ **Identity and Access Management** for stakeholders
- ✓ Manage **networking** and **security** at rest and in transit

Your Journey: Module Overview

This 20 week bootcamp is split into 6 modules as follows:





Weeks 1-3: Intro & Tooling

To give you context on the journey you're going to go on and how to participate, we'll walk you through the course, how it will work and what you will cover, and introduce you to your Virtual Machine and the tools and systems you'll need to know.

What you'll learn and explore

What **Virtual Machines** are, what they're for and how to use **SSH** (Secure Shell Protocol) to gain access to yours, and operate it.

The Operating System for most servers is Linux, so you'll learn about the **Linux Filesystem**, how to interact with it via the **Command Line**, and navigate it using **Linux Commands** so you can install and manage software on those servers.

Multiple developers working on code need tools for "saving" their code, establishing **version control** and **merging** their code together. Git and GitHub are industry standard tools for this.

Markdown files for documentation.

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Weeks 4-7:

Build a Start-up

To enable you to understand the architecture and requirements of web applications, and the Software Development Life Cycle, you're going to simulate creating a start up by building and managing 2 websites, one for internal users and one for external customers.

What you'll learn and explore

Set up the infrastructure to create a website with a **server** and a **database**, by installing and configuring Wordpress , Nginx, and MySQL.

What **containers** are for and how to configure them, network them, persist their data, and orchestrate them using **Docker**, Docker Networks, Docker Volumes and Docker Compose.

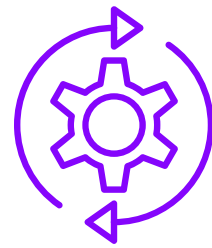
Security certification for sites.

Staging environments to separate production from testing and development.

How to **backup** and **recover** sites.

Documentation management with Docusaurus.





Weeks 8-12: Automate Tasks

Automation is central to DevOps. It speeds up processes and reduces human error. In this module you'll learn how to construct CI/CD pipelines and use Kubernetes to automate processes that you'll later apply to your start-up to progress code through the DevOps lifecycle.

What you'll learn and explore

Start creating automated workflows for your **CI/CD pipeline** with **GitHub Actions** automation platform, and execute them with self-hosted runners.

Automate building Docker images and write scripts to automate **testing** for changes to those Docker images.

What **artifacts** are, how they're stored, and concepts and techniques for **artifact promotion** through staging environments.

Container Orchestration using **Kubernetes**.

Namespaces, pods, services, config maps, secrets, deployments, service accounts. Security control with RBAC (Role Based Access Control), and more.

Configuration and package management. Load balancing and certification management.

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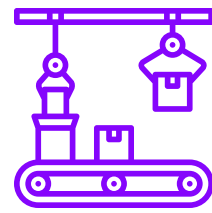


kubernetes



Kustomize.io





Weeks 13-14:

Migrate with K8S

Having learnt how to use Kubernetes (aka K8S), you'll now practice applying that learning to your start-up by migrating from deploying unmanaged containers, to containers deployed with Kubernetes.

What you'll learn and explore

First, use Kubernetes to **deploy** to your staging environments, and then to your production environments.

Risks involved in **migration** and approaches to mitigate those risks.

Monitoring the health and performance of your containers and their Kubernetes cluster with **Prometheus**. Visualising those results with **Grafana**.

Logging these results with an EFK stack (Elasticsearch, Fluentd and Kibana).



Weeks 15-18: Scale-up Phase

Business growth is limited by the physical limitations of a local or on-premises infrastructure. To scale up, you'll need to harness the capacity of the cloud to respond to user demand, and use Infrastructure as Code to programmatically express and document the provisioning of your infrastructure requirements.

What you'll learn and explore

The services provided by **Google Cloud Platform** (GCP) and Storage.

Create **Infrastructure as Code** (IaC) with **Terraform** to automatically provision resources for Day 1 and Day 2+. Get familiar with commands, state, modules and providers.

Combine the power of GCP and Terraform.

Set up **GitHub runners** to automatically execute tasks on GCP, using **Google Compute Engine** (GCE).

Identity and Access Management, Networking and Secret Management within the GCP.

GCP Artifact Registry.



Weeks 19-20: Completion!

Apply what you learnt in the Scale-up Phase to your simulated company to move all the infrastructure and CI/CD processes from local servers, to GCP, provisioning infrastructure with Terraform.

What you'll learn and explore

Learn about **Google Kubernetes Engine** (GKE) to manage the process.

Automate deployments in the cloud with GitHub and **Workload Identity Federation**.

Build on GitHub Workflow and push to GCP Artifact Registry.

Deploy your software on GKE from GitHub.

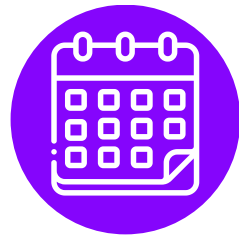
You have now built a complete end-to-end CI/CD pipeline for automating the full Software Development Life Cycle to deploy your application to the cloud in a manner that lets it scale up and down with demand!



Bootcamp Details

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The course will be taught as if you're in a live work environment so you'll act like a DevOps Engineer from Day 1 and build a startup from scratch!



Part-time (evenings): 18:30 - 21:30, twice a week (Tue & Thu), for 20 weeks



Class sizes are kept comparatively small to give you more **personalised support**



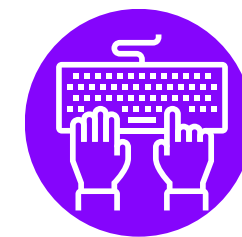
You'll have access to a **Google Cloud** project from the Scale-up Phase



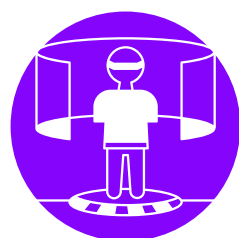
You'll have **exclusive access** to a remote Virtual Machine (provided free by us)



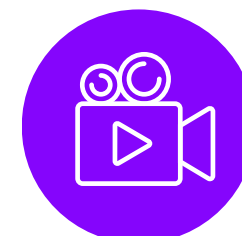
Taught live and remotely via **Zoom** so you can train from anywhere



Sessions are a mix of live, interactive, instructor-led training, and **hands-on** practical labs



Projects will **simulate real** scenarios common in the development and deployment of applications



We **record** every live session and share that with you in case you miss a class or need to recap

Bootcamp Prerequisites

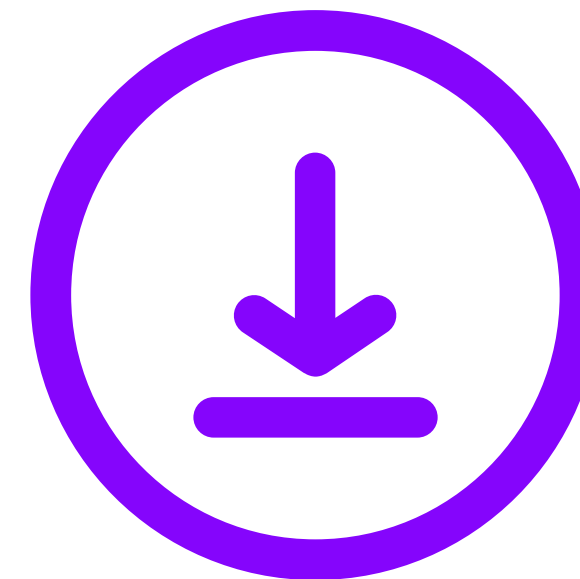
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Mandatory / Technical:

- A desktop computer or laptop
- You **must** have admin privileges on your machine
- Your machine must be running either a Linux, Mac or Windows operating system
- Visual Studio Code on your machine - you can download for free here: (<https://code.visualstudio.com/>)

Optional / Knowledge:

- An understanding of Git and GitHub
- Basic knowledge of a programming language (e.g. Python, Java, JavaScript, GoLang)



Meet your Instructor

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My name is Antonio (you can call me [Anto](#)). I'm an Italian geek adopted by the United Kingdom, where I live and work as a software engineering consultant with [15+ years of experience](#) in a variety of industries from gaming to finance. Currently I'm a Principal Software Engineer and DevOps Lead, running a team of ~40 people.

I love evangelising tools and culture in the tech space and am passionate about photography, and of course as an Italian - coffee and pizza are in my genes!

Everything started when I was four and my father walked in with our first PC (an Olivetti M24), and since then I started playing with hardware, software and electronics and I'm not bored yet!

I was so fascinated by computers that I did my BEng and MEng in software engineering and immediately after graduating I moved to the UK with my partner to find my dream job.

I love to experiment with new tools and programming languages and share my learnings and opinions on my YouTube channel [OutOfDevOps](#).

Career-change Support

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We pride ourselves on giving you the support you need, even if it's beyond the bootcamp end date. Here's how...



JOB SEARCH

Understand where to look for roles and how to **interpret job specs**, as well as how to interact with recruiters



NETWORKING

We'll share any invites to relevant events or **opportunities** that are shared with us, with you



LINKEDIN

We'll **reformat your CV** and adapt your LinkedIn profile to surface information to recruiters quickly



INSIGHTS

Your instructor will share **insight** from 15 years of experience, to help prepare you for your first role in DevOps

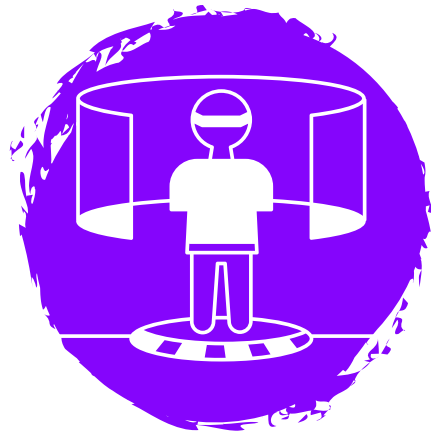


INTERVIEWS

We'll run **mock interviews** to get you comfortable with the interview process and what to expect

Why Choose Us?

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Workplace Simulator

With your own Virtual Machine and access to a Google Cloud project, we can emulate a workplace environment so you can tackle real world challenges and experience the job you're training for.



Personalised support

We keep our class sizes small, ensuring you get the support you need. Many schools pack their cohorts with 50+ students, but we will make sure that doesn't happen so that you don't just feel like a number.



Commercially relevant

We teach what the market wants you to know now, not 5+ years ago. Your instructor will show you the best practices and tech that they use as a professional DevOps Lead, and keep the curriculum current.



A family-run school

Some schools promote full-time training because it allows them to process more students in less time. We're family run with no shareholders to please, so we can ensure our focus is on what works best for you.



Experienced instructors

Many schools use their recent grads to teach you, but all our tutors have 15+ years of real-life industry experience. They intuitively know the tech and offer wisdom that a junior developer won't have acquired yet.



Accessibility matters

We make our training as accessible as possible by offering: discounted fees, part-time remote courses so you can still earn while you learn from anywhere, plus we record every session.

Tuition Fees

We understand that a bootcamp is a big investment of your time and money. For that reason, we offer a number of ways to pay to make things easier for you.

Part-time*

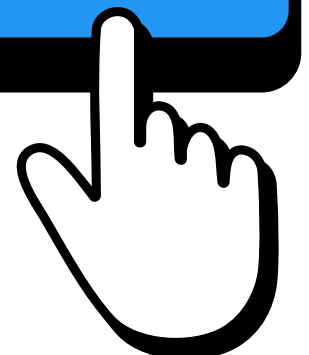
£7,000

Payable over 25 weeks if you are paying the fees directly without 3rd party financing

£1,000 deposit up to 2 weeks prior to start date followed by 5 x instalments of £1,200 payable at the beginning of weeks 3, 8, 13, 18, & 23

**We don't currently run the DevOps Bootcamp on a full-time basis*

OPTIONS



Financing Options

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If our instalment plan doesn't suit, we're also partnered with 2 different 3rd-party finance firms* who've helped a number of our students spread their payments

The logo for Lendwise, featuring the word "Lendwise" in a blue sans-serif font with small colored squares above the letters 'e' and 'i'.

Loans repayable up to 4 years. Costs ~ £183 per month.
Click their logo to start the process.

The logo for Knoma, featuring the word "Knoma" in white sans-serif font on a blue rectangular background, with two green circles of different sizes to the right.

Interest-free loans over 10 months. Costs £700 per month.
Click their logo to start the process.

**Both firms have confirmed that they use soft credit checks to assess your eligibility for a loan, so if you are NOT eligible, it won't affect your credit rating*

About Us



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Hello, we're Robert, Katie and James, we're family, and we founded The Jump Digital School in 2018 to enable you to unleash your potential by mastering the awesome power of tech!

Our whole purpose is to help you make the jump, by making our training **more accessible**, **commercially valuable**, **effective**, and **in-depth**, so that you can break into tech and become an engineer, upskill in your current role, or bring your entrepreneurial ideas to life.

We offer four professional bootcamp types - Software Engineering, Web Developer, JavaScript and **DevOps**. They're all:

- run by professional instructors with 15+ years of engineering experience, so you're learning from true masters;
- curated to reflect what the market wants you to know now, not 5 years ago;
- limited in size so you get the dedicated support you need.

We look forward to helping you **make the jump** into tech!



Contact Us

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If you'd like to find out more about the school, this DevOps bootcamp or any of our other course offerings, then we'd love to hear from you!

Our application process is really simple (don't worry, there's no tech test or anything arbitrary like that).

It's just a phone conversation to get to know you and what you're hoping to get out of the bootcamp, so that we can help you choose the right option.



02073108642 (Office landline)



07786094990 (Rob's mobile)



info@thejump.tech



www.thejump.tech

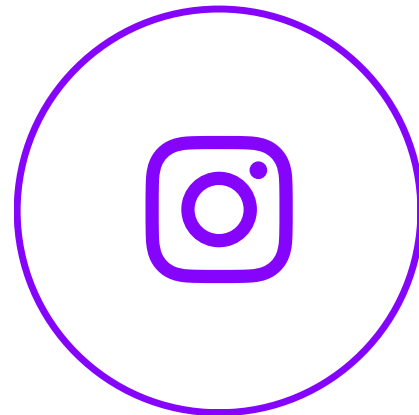
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