

Cloud & DevOps

Automate, deploy, operate. Takes students from Linux and Git to deploying and operating a containerized app on AWS or Azure through a CI/CD pipeline.

Target roles: Cloud Support Engineer (Associate) · Cloud Operations / DevOps Trainee · Junior DevOps Engineer

12 WEEKS	4 MODULES	72 CONTACT HOURS	70% PRACTICAL GRADING	4 / 5 DIFFICULTY
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AT A GLANCE

Your 12-week journey



Capstone = the final team project in Week 12: students apply the whole course to one real-world problem, then present it and write it up.

YOU LEAVE WITH

✓ **Capstone and a GitHub portfolio**

✓ **Ready for AWS Cloud Practitioner or AZ-900**

✓ **Cloud Support Engineer · DevOps Trainee**

Course outline is subject to change to reflect industry trends and vendor updates. See Important notes on the last page.

BEFORE YOU START

Difficulty and prerequisites

WHY IT'S UPPER-INTERMEDIATE

Most moving parts: Linux, Git, cloud, pipelines, Terraform, containers and Kubernetes build on each other; reading and fixing code and YAML.

PREREQUISITES · EDUCATION	PREREQUISITES · SKILLS	LAPTOP AND SETUP
- Final-year bachelor's student or recent graduate - CS, IT, ECE or a related field - Comfortable reading technical English	- Basic programming, ideally Python - Writes loops and functions; reads error messages - Operating system and networking basics	64-bit laptop, virtualization enabled 8 GB RAM minimum, 16 GB recommended 50 GB free disk - Stable internet connection

PROGRAM FORMAT

How every week runs

Session	Format	What happens
Learn class	Instructor-led · 2 hrs	Concepts, terminology and a live instructor demo
Practice class	Instructor-led · 2 hrs	Instructor-led hands-on practice, then a case study discussion
Lab	2 hrs · instructor available	Guided ticket-style task done by the student, with the instructor on hand for questions; submitted with a short written report

Week 1: Foundations Every track opens the same way: a baseline skills quiz, lab and tool setup, how IT systems fit together, Linux and Windows command-line basics, and workplace habits (tickets, documentation, professional email). It levels the batch before track content starts.

Instructor access Students can email the instructor anytime for clarifications, outside class and lab hours.

Assessment 70% of the grade is practical: weekly lab reports, the mid-term practical in Week 6 and the capstone in Week 12. Every module has a required core lab (entry level) and an optional stretch lab (mid-level). The capstone is graded Core or Advanced; Advanced requires the stretch labs.

CAREER LADDER

Entry roles, and where they lead

ENTRY · 0-2 YEARS Cloud Support Engineer (Associate / Engineer I) · Cloud Operations / DevOps Trainee · Junior DevOps Engineer Core labs in Modules 1-4 · AWS Cloud Practitioner or AZ-900	→	NEXT STEP · 2-5 YEARS Cloud / DevOps Engineer · Site Reliability Engineer · Platform / Kubernetes Engineer Stretch labs: Terraform across environments, GitOps, SLO alerts, leading an outage · SysOps or AZ-104, Terraform Associate, CKA
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Next-step roles need on-the-job experience. Stretch labs and the next certifications give graduates a head start toward them.

CURRICULUM

Four modules, twelve weeks

Module 1 · Linux, Networking and Git

Weeks 1-3

Outcome: Administers a Linux server, scripts routine tasks, works in a team Git workflow.

Week	Learn class	Practice class	Lab (instructor available)	Case study
1. Foundations	Baseline quiz; how an app reaches a user: servers, networks, OS, cloud; career map	Linux command-line basics; tour of the DevOps toolchain	Set up VirtualBox or WSL, GitHub, and an AWS free-tier account with billing alerts; first CLI tasks	—
2. Linux administration	Users, permissions, processes, packages, services, logs	Bash scripting: variables, loops, cron	Script that automates user setup and log cleanup	—
3. Networking and Git	TCP/IP, DNS, HTTP, SSH and ports for cloud engineers	Git and GitHub: branches, pull requests, merge conflicts, reviews	Team repo with reviewed pull requests	GitLab 2017 database loss

STRETCH LAB · MID-LEVEL

Automate a server build end to end with a script and a scheduled health check; set up branch protection and a release process in GitHub.

Module 2 · Cloud Platforms

Weeks 4-6

Outcome: Builds, secures, backs up and monitors a two-tier app on AWS or Azure. Ends with the mid-term.

Week	Learn class	Practice class	Lab (instructor available)	Case study
4. Cloud fundamentals	Cloud models, regions and zones, AWS and Azure consoles, IAM	Compute: EC2 and Azure VMs, SSH keys, security groups	Launch and secure a web server VM	AWS S3 outage 2017
5. Cloud storage and networking	Object and block storage, VPC/VNet, subnets, load balancers	Managed databases, backups, high availability, disaster recovery	Two-tier app behind a load balancer, with a tested backup	OVH data center fire 2021
6. Cloud operations and cost	Monitoring (CloudWatch, Azure Monitor), cost, tagging, budgets	Mid-term assessment (quiz + practical)	Set alarms and a budget; tag every resource	AWS us-east-1 outage 2021

STRETCH LAB · MID-LEVEL

Build a multi-zone, highly available app with least-privilege IAM roles and a tested restore; produce a cost report with savings recommendations.

Module 3 · CI/CD, Infrastructure as Code and Containers

Weeks 7-9

Outcome: Ships an app through an automated pipeline, with infrastructure defined in code and the app in containers.

Week	Learn class	Practice class	Lab (instructor available)	Case study
7. CI/CD pipelines	Build, test, deploy; pipeline design with GitHub Actions	Tests, artifacts, environments and secrets in a pipeline	Pipeline that tests and deploys an app on every merge	Knight Capital 2012
8. Infrastructure as code	Terraform: providers, state, modules	Configuration management with Ansible	Provision a network and VM with Terraform; configure it with Ansible	—
9. Containers	Docker images, Dockerfiles, registries, Compose	Container security and building images in CI	Containerize a two-tier app and push it through the pipeline	—

STRETCH LAB · MID-LEVEL Write reusable Terraform modules and deploy dev and prod environments from one pipeline, with approvals and managed secrets.

Module 4 · Kubernetes, Observability and Capstone

Weeks 10-12

Outcome: Runs the app on Kubernetes, watches it in production and handles an outage.

Week	Learn class	Practice class	Lab (instructor available)	Case study
10. Kubernetes	Pods, deployments, services, scaling	Managed Kubernetes (EKS/AKS) overview; Helm basics	Deploy to a local cluster, scale it, roll back a bad release	—
11. Observability and operations	Prometheus and Grafana, logs, alerting; SLOs, on-call, postmortems	Python for automation against cloud APIs	Build a dashboard and alert; respond to a simulated outage and write the postmortem	Fastly 2021; CrowdStrike 2024
12. Capstone and career launch	Capstone presentations: deploy-and-operate project	Final practical; certification and career planning	Capstone report; mock technical interview	Student-chosen

STRETCH LAB · MID-LEVEL Deploy to Kubernetes with GitOps (Argo CD), add autoscaling and SLO-based alerts; lead the outage response.

TOOLS AND CERTIFICATIONS

What students use and where they go next

Tools: Linux, Git and GitHub, AWS, Azure, GitHub Actions, Terraform, Ansible, Docker, Kubernetes (kind or minikube), Prometheus, Grafana, Python, Jira or ServiceNow for lab tickets.



Third-party certification exam fees are not included in the program. See Important notes.

CAREER SERVICES

Support through all 12 weeks

Service	What the student gets	When
Instructor access by email	Questions answered anytime by email, beyond class and lab hours	Weeks 1-12
Resume builder assistance	A track-specific resume built from lab reports and the capstone; one-to-one review and LinkedIn profile check	Draft by Week 6, final in Week 12
Certification path	Personal plan naming the first exam, the anchor exam and the next step; exam-style practice questions	Plan in Week 1, review in Week 12
Career build assistance	Role map for the track, portfolio of lab work on GitHub, interview prep and a mock technical interview	Weeks 1, 6 and 12
Talent Pool	Top performers, especially those with an Advanced capstone, are considered for Ampleopp Solutions and client opportunities	After Week 12

IMPORTANT NOTES

Curriculum updates	This outline reflects current industry practice. Topics, tools, labs, case studies, sequence and schedule may be updated to keep pace with industry trends, vendor and exam changes, and the needs of each batch. Core learning outcomes are maintained.
Certifications	Certification names, exam codes, content and fees are set by third-party vendors and may change. Exam fees are not included in the program.
Career outcomes	Career opportunities are not guaranteed and are subject to candidate performance, skill suitability, actual client requirements and the respective organization's selection process.
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