

DevOps Integration and Capstone

8-week detailed curriculum | Target: Portfolio and job readiness

I built this guide to give you a clear path into technology without expecting you to already know the language. You are not supposed to understand everything on day one. Your job is to show up consistently, practice, ask questions, and keep evidence of what you build. I will help you connect the pieces, but the hands-on work is where the confidence will come from.

Study rule: Do not only watch videos. Type the commands, build the labs, break things, fix them, and explain what happened in your own words.

Your outcome for this phase

Connect Git, Terraform, CI/CD, observability, security, documentation, and incident response into a production-style delivery workflow.

Expected pace: 2-3 hours Monday through Friday, 3-4 hours Saturday, and Sunday reserved for rest or catch-up. Each week ends with something you can demonstrate.

Phase learning resources

Resource	How to use it
HashiCorp Terraform tutorials	Official guided Terraform labs.
GitHub Actions Skills	Interactive CI/CD exercises in GitHub.
Prometheus getting started	Official metrics and monitoring tutorial.
Grafana tutorials	Hands-on dashboard and observability tutorials.
roadmap.sh DevOps	A visual checklist of DevOps topics and tools.

How to prove you learned it

- Explain the concept without reading notes.
- Complete the lab twice: once with instructions and once from memory.
- Push scripts, diagrams, screenshots, or written reflections to GitHub.
- Write down one failure, the cause, and the fix each week.
- Answer practice questions only after performing hands-on work.

Week 1 - Git workflow and delivery planning

Weekly deliverable: Complete the assigned lab, update your GitHub notes, and record a 3-5 minute explanation of what you learned.

Day	Exact learning assignment	Proof of work
Mon	Branching strategy and pull requests	Notes + commands/screenshots
Tue	Semantic commits, tags, releases	Notes + commands/screenshots
Wed	Issue templates and project board	Notes + commands/screenshots
Thu	Define capstone requirements and architecture	Notes + commands/screenshots
Fri	Lab: repository standards and protected workflow	Notes + commands/screenshots
Sat	Weekly demo: explain what you built, what failed, how you fixed it, and what you will improve next.	Completed lab + weekly recap

End-of-week questions

- 1 What problem does this technology or concept solve?
- 2 What are the most important commands, services, or components?
- 3 What broke during the lab, and how did you identify the cause?
- 4 How does this week connect to cloud or DevOps work?

Week 2 - Terraform fundamentals

Weekly deliverable: Complete the assigned lab, update your GitHub notes, and record a 3-5 minute explanation of what you learned.

Day	Exact learning assignment	Proof of work
Mon	Providers, resources, data sources	Notes + commands/screenshots
Tue	Variables, outputs, locals	Notes + commands/screenshots
Wed	State, backends, locking	Notes + commands/screenshots
Thu	Modules and environment structure	Notes + commands/screenshots
Fri	Lab: provision VPC and compute	Notes + commands/screenshots
Sat	Weekly demo: explain what you built, what failed, how you fixed it, and what you will improve next.	Completed lab + weekly recap

End-of-week questions

- 1 What problem does this technology or concept solve?
- 2 What are the most important commands, services, or components?
- 3 What broke during the lab, and how did you identify the cause?
- 4 How does this week connect to cloud or DevOps work?

Week 3 - Terraform production practices

Weekly deliverable: Complete the assigned lab, update your GitHub notes, and record a 3-5 minute explanation of what you learned.

Day	Exact learning assignment	Proof of work
Mon	Plan/apply workflow and review	Notes + commands/screenshots
Tue	Imports, drift, lifecycle rules	Notes + commands/screenshots
Wed	Validation, formatting, security scanning	Notes + commands/screenshots
Thu	CI integration and secrets	Notes + commands/screenshots
Fri	Lab: reusable AWS module	Notes + commands/screenshots
Sat	Weekly demo: explain what you built, what failed, how you fixed it, and what you will improve next.	Completed lab + weekly recap

End-of-week questions

- 1 What problem does this technology or concept solve?
- 2 What are the most important commands, services, or components?
- 3 What broke during the lab, and how did you identify the cause?
- 4 How does this week connect to cloud or DevOps work?

Week 4 - CI/CD pipeline

Weekly deliverable: Complete the assigned lab, update your GitHub notes, and record a 3-5 minute explanation of what you learned.

Day	Exact learning assignment	Proof of work
Mon	Pipeline stages and runners	Notes + commands/screenshots
Tue	Build and unit test	Notes + commands/screenshots
Wed	Container build, tag, scan, push	Notes + commands/screenshots
Thu	Deploy to Kubernetes and rollback	Notes + commands/screenshots
Fri	Lab: end-to-end pipeline	Notes + commands/screenshots
Sat	Weekly demo: explain what you built, what failed, how you fixed it, and what you will improve next.	Completed lab + weekly recap

End-of-week questions

- 1 What problem does this technology or concept solve?
- 2 What are the most important commands, services, or components?
- 3 What broke during the lab, and how did you identify the cause?
- 4 How does this week connect to cloud or DevOps work?

Week 5 - Observability

Weekly deliverable: Complete the assigned lab, update your GitHub notes, and record a 3-5 minute explanation of what you learned.

Day	Exact learning assignment	Proof of work
Mon	Metrics, logs, traces, SLIs/SLOs	Notes + commands/screenshots
Tue	Prometheus scrape and queries	Notes + commands/screenshots
Wed	Grafana dashboards	Notes + commands/screenshots
Thu	CloudWatch logs and alarms	Notes + commands/screenshots
Fri	Lab: monitored application	Notes + commands/screenshots
Sat	Weekly demo: explain what you built, what failed, how you fixed it, and what you will improve next.	Completed lab + weekly recap

End-of-week questions

- 1 What problem does this technology or concept solve?
- 2 What are the most important commands, services, or components?
- 3 What broke during the lab, and how did you identify the cause?
- 4 How does this week connect to cloud or DevOps work?

Week 6 - Reliability and incident response

Weekly deliverable: Complete the assigned lab, update your GitHub notes, and record a 3-5 minute explanation of what you learned.

Day	Exact learning assignment	Proof of work
Mon	Health checks and self-healing	Notes + commands/screenshots
Tue	Deployment strategies: rolling, blue-green, canary	Notes + commands/screenshots
Wed	Runbooks, alerts, escalation	Notes + commands/screenshots
Thu	Incident timeline and postmortem	Notes + commands/screenshots
Fri	Game day: intentionally break and recover app	Notes + commands/screenshots
Sat	Weekly demo: explain what you built, what failed, how you fixed it, and what you will improve next.	Completed lab + weekly recap

End-of-week questions

- 1 What problem does this technology or concept solve?
- 2 What are the most important commands, services, or components?
- 3 What broke during the lab, and how did you identify the cause?
- 4 How does this week connect to cloud or DevOps work?

Week 7 - Security and documentation

Weekly deliverable: Complete the assigned lab, update your GitHub notes, and record a 3-5 minute explanation of what you learned.

Day	Exact learning assignment	Proof of work
Mon	Secrets, IAM, RBAC, image scanning	Notes + commands/screenshots
Tue	Dependency and IaC scanning	Notes + commands/screenshots
Wed	Architecture diagrams and ADRs	Notes + commands/screenshots
Thu	README, runbook, setup and teardown	Notes + commands/screenshots
Fri	Capstone hardening review	Notes + commands/screenshots
Sat	Weekly demo: explain what you built, what failed, how you fixed it, and what you will improve next.	Completed lab + weekly recap

End-of-week questions

- 1 What problem does this technology or concept solve?
- 2 What are the most important commands, services, or components?
- 3 What broke during the lab, and how did you identify the cause?
- 4 How does this week connect to cloud or DevOps work?

Week 8 - Career launch

Weekly deliverable: Complete the assigned lab, update your GitHub notes, and record a 3-5 minute explanation of what you learned.

Day	Exact learning assignment	Proof of work
Mon	Resume bullets tied to projects	Notes + commands/screenshots
Tue	GitHub portfolio cleanup	Notes + commands/screenshots
Wed	LinkedIn and elevator pitch	Notes + commands/screenshots
Thu	Technical and behavioral interview drills	Notes + commands/screenshots
Fri	Record capstone demo and begin applications	Notes + commands/screenshots
Sat	Weekly demo: explain what you built, what failed, how you fixed it, and what you will improve next.	Completed lab + weekly recap

End-of-week questions

- 1 What problem does this technology or concept solve?
- 2 What are the most important commands, services, or components?
- 3 What broke during the lab, and how did you identify the cause?
- 4 How does this week connect to cloud or DevOps work?

Final phase assessment

Do not move forward based only on time spent. Move forward when you can perform and explain the following:

- Complete the main project without copying every step.
- Troubleshoot at least three intentionally introduced failures.
- Explain the architecture or workflow using a diagram.
- Score at least 80% on two separate practice assessments when a certification is targeted.
- Teach the core concepts back to another person in plain language.

Certification note

Target: **Portfolio and job readiness**. Certification dates should be adjusted based on readiness. Passing quickly is less important than retaining the skill and being able to use it in a real environment.