ITI8801 · Cloud Architectures and DevOps

How this course works

Siim Rebane · TalTech · Autumn 2026

These slides are the standing reference for every rules question. Link stays in the course group.

What I expect you already know

You can…	Because we will…
write a small application in some language	deploy one, many times, and not talk about the code
use **Git**: clone, branch, commit, push	code and infrastructure in this course live in Git
use a **Linux shell**: `cd`, `ls`, `cat`, `ssh`, edit a file	live in one for 16 weeks
say what an **IP address** and a **port** are	build networks by hand
call and write a **REST** endpoint that returns JSON	we deploy and operate applications with these technologies all semester — writing them is assumed, not taught

Nothing about cloud, Docker, Kubernetes, Terraform or monitoring is assumed. That's the course.

What we cover

Area	Technology
Cloud fundamentals, networking, identity	Azure (or AWS) on your own account
Infrastructure as code	**Terraform**
Containers	**Docker**, a container registry
Continuous delivery	**GitLab CI/CD** (continuous integration / continuous delivery)
Orchestration	**Kubernetes**
Observability	**Prometheus, Grafana**, centralised logs
Resilience & operations	zero-downtime deploys, disaster recovery, cost, security

Schedule

	Time	Room	Group
Monday — lecture	14:00–15:30	MEK-114	IAIM11, IAIM12
Monday — practice	16:00–17:30	MEK-110	IAIM11
Wednesday — practice	16:00–17:30	MEK-126	IAIM12

Weeks 1–16. Lectures and practice sessions are recorded on Echo360.

Grading

Component	Points
10 individual assignments × 2	20
Team project and presentation	20
Written exam, pen & paper	60

- Exam: minimum **50 % on the exam itself** to pass
- **To sit the exam: all 10 assignments submitted**

Assignments

- **Published** Monday with the lecture
- **Due** Sunday of the *following* week → 2 pts
- One week late → 1 pt
- Later → 0 pts — **but you must still submit it**

Team project and presentation

20 points.

In the second half of the course you form teams and build a bigger system together, ending with a presentation. Teams are formed then, once it is clear who is staying.

LLM policy

I have no way to check whether you used an LLM (large language model — ChatGPT, Claude, Copilot…), so I assume you did.

- They are good at explaining what is going on. Use them for that.
- The exam is on paper, no resources allowed.
- The assignments are not about having done something once. They are about understanding the concept and seeing it work.

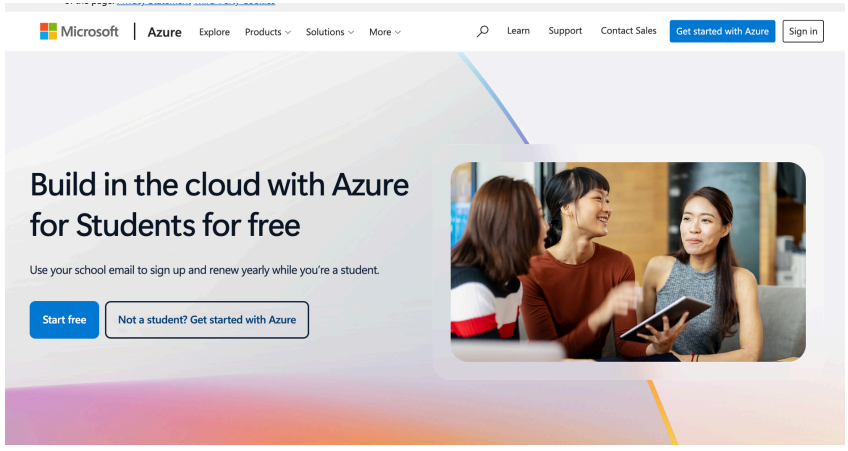
Exam

- Pen and paper.
- 60 points; minimum 50 % on the exam to pass.
- Sample questions are published before the exam.
- Consultation sessions before the exam to go through them.

Cloud account

1. **Azure for Students** — https://azure.microsoft.com/free/students → *Start free* with your @taltech.ee account. **$100 / year, no credit card**, renews yearly while you're a student. This is the default. *(Ignore the "$200 free trial" — that one wants a card.)*
2. **AWS Free Plan** — create your own account at aws.amazon.com/free. A credit card is required for validation; it is not billed unless you explicitly upgrade. The account lasts **6 months**, then it is closed. I know AWS best and fully support it.
3. **Neither works for you?** Tell me. I'll deal with it.

All labs are completable on AWS.



Your credits

Cloud is **metered**. Every resource costs per hour whether you use it or not.

Your Azure for Students credits are **$100 for the whole year**. *Education* → *Overview* shows what's left.

Setting up something new is a pain — for you and for me. If you run out, the first fix is switching provider (Azure ↔ AWS). Try to avoid it.

Protect your keys

Your account can create resources that cost money — so anything that can log in as you **is worth money to someone else**.

- Credentials pushed to a **public Git repository** are found by scanner bots **within minutes**. Crypto-miners are running on your account before you notice.
- Never put keys or passwords in Git, chat, screenshots, or slides.
- If a key leaks: **revoke it first**, clean up second.

Can this course be taken remotely?

- Officially, no — this is an on-site course.
- I do my best to make things available remotely — lectures and practice sessions are recorded on Echo360 — but no promises.
- Some things might need your live participation.
- The exam is on site. Definitely.

Where things live

- **Everything is on Moodle**: announcements, grades, slides, recordings.
- Name your Git repository **ITI8801-2026** — it will be needed in future practical work, and the name is how I and the TAs (teaching assistants) get access. Named it wrong? Delete it and create a new one — don't rename.

Contact

- Email siim.rebane@taltech.ee or Teams. When in trouble, let me know.
- Consultations on request. Planned consultation times are published on Moodle, like everything else.