

Practical Lab

Computer Systems Lab

<https://github.com/TUM-DSE/sys-lab>

Ilya Meignan--Masson
Prof. Pramod Bhatotia



Course instructors



Ilya Meignan--Masson
PhD student



Prof. Pramod Bhatotia
Professor

Systems Research Group

<https://dse.in.tum.de/team/>

Mentors



Martin Fink

PhD student



Aleksandra Świerkowska

PhD student



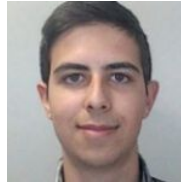
Patrick Sabanic

PhD student



Teofil Bodea

PhD student



Francisco Romão

PhD student



Julian Pritzi

PhD student

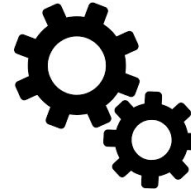
Computer systems lab (aka “sys-lab”)



Team
(~3-4 students per team)
advised by a mentor



Understand



Evaluate



**Generate
ideas**

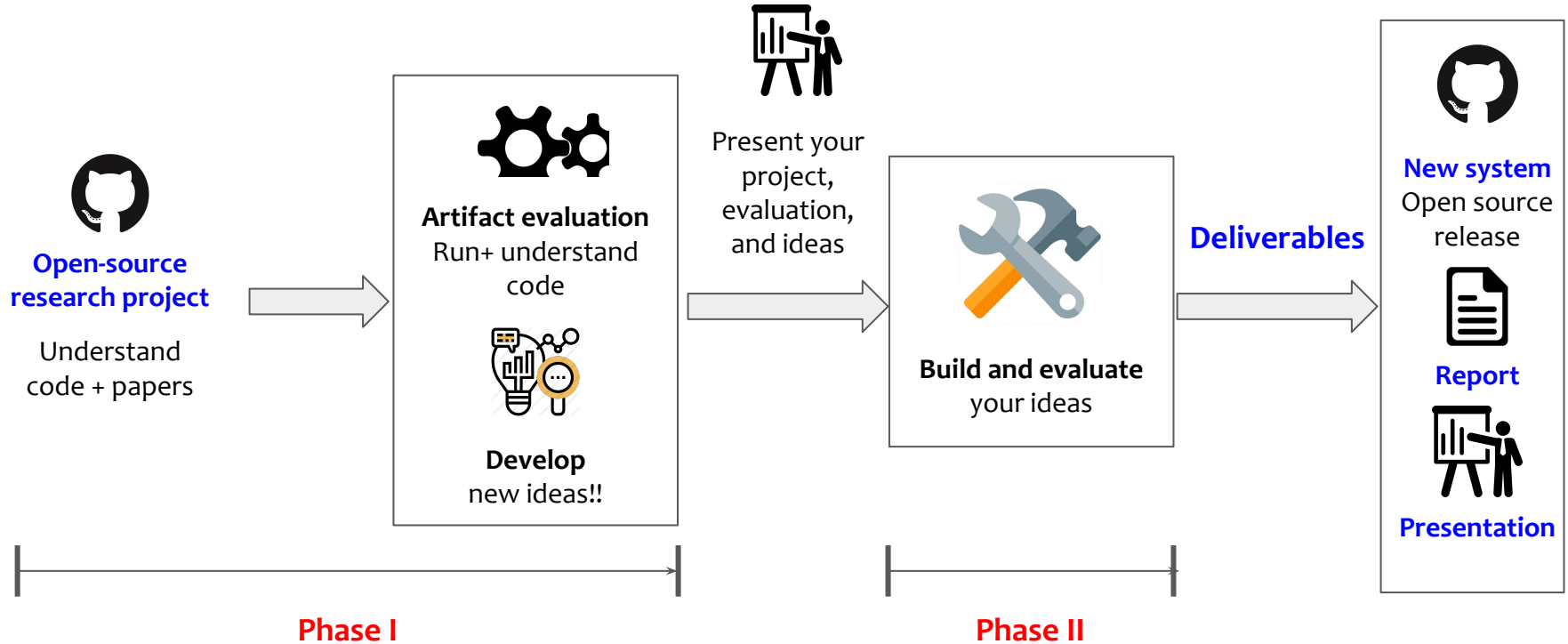


**Build on
your ideas**



Open source project
(state-of-the-art research topic)

sys-lab



- State of the art open-source computer systems projects
- End-to-end system design and development
 - What is it? → Learn by **understanding** the system
 - How can we use it? → Learn by **evaluating** the system
 - What can be improved? → Learn by **generating** new ideas!
 - How to realise our ideas? → Learn by **building** the system

Tentative topics (WS 24/25)

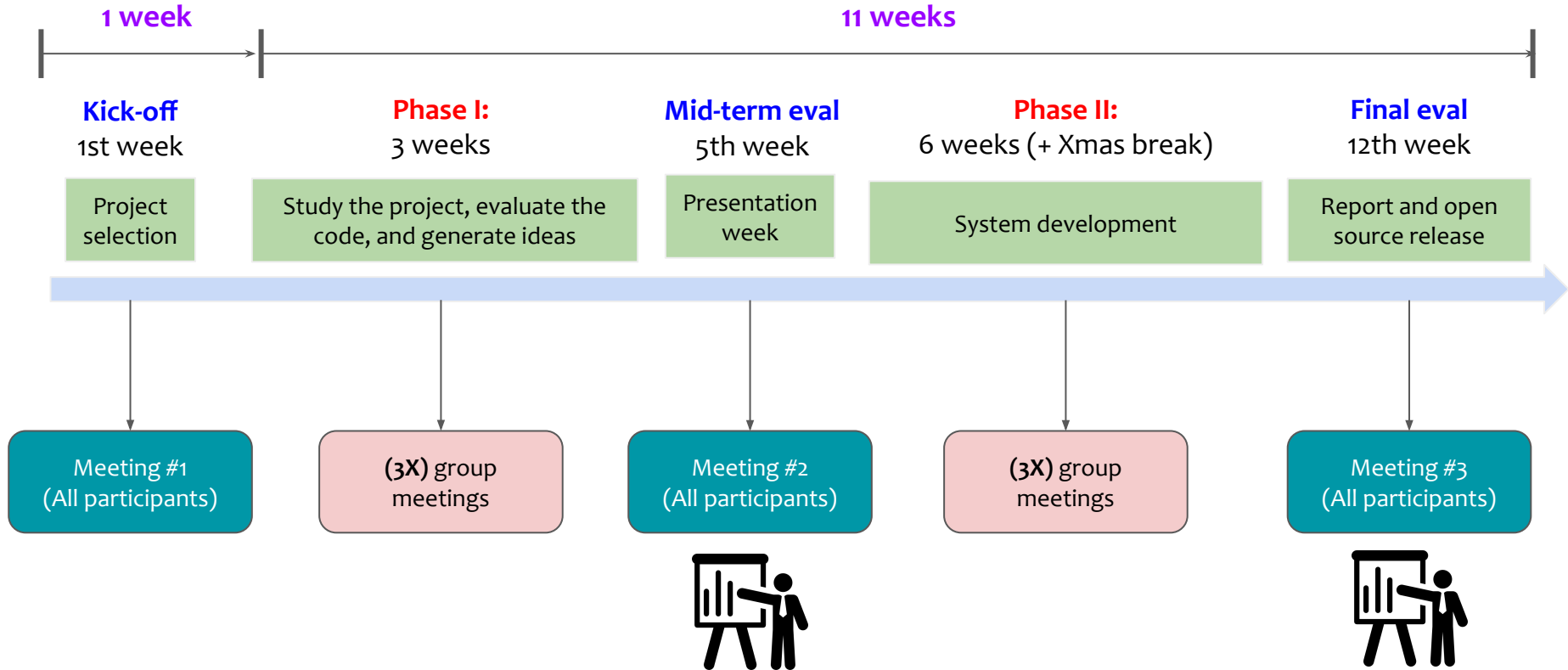
Projects are based on the research themes at the chair

1. Cloud security (Patrick)
2. Quantum systems (Aleksandra)
3. Quantum compilation (Francisco)
4. CXL memory systems / formal verification (Julian)
5. Hardware-security (Teofil)
6. Compiler + security (Martin)

IMPORTANT:

The exact list of projects will be provided in the first week

Timeline



All participant meetings – IN PERSON	Dates (Thu, 13:00h)
Kick-off: Project selection	17th October 2024 (13:00h-14:00h)
Phase I: Mid-term evaluation	21st November 2024 (13:00h-16:00h)
Phase II : Final evaluation	30th January 2025 (13:00h-17:00h)

Group meetings	Dates
(3x) phase I group meetings	Directly organized with the team mentor
(3x) Phase II group meetings	Directly organized with the team mentor

Category	Details	Grade
Phase I: Artifact evaluation	Running and evaluating code by reproducing the results described by the authors	20%
Phase II: System building	Extending the system with your own ideas	40%
(2x) Presentations	Two presentations are due after each phase, audience participation is also graded	20%
Report + Open-source release	One report covering all aspects	20%

Category	Details	Grade
Phase I: Artifact evaluation	Running and evaluating code by reproducing the results described by the authors	20%
Phase II: System building	Extending the system with your own ideas	40%
(2x) Presentations	Two presentations are due after each phase, audience participation is also graded	20%
Report + Open-source release	One report covering all aspects	20%

If applicable: Pull requests to the project -> Bonus points

- **Project-based course (~4 students per team) advised by a Team Leader**
- **Meetings:**
 - **3x** all participant meetings
 - **6x** group meetings (with the team mentor)
- **Communication:**
 - Slack: course channel for announcements and group channel for the team work
- **Format:**
 - **Meeting #1: Kick-off** -- project selection, team formation, and next steps
 - **Meeting #2: Intermediate presentation** covering overview, evaluation, and new ideas!
 - **Meeting #3: Final presentation** covering your final contributions (demo, code, & report)

Learning goals

- Our goal is to have fun breaking and hacking computer systems
- Learn about cutting-edge research in computer systems
- Cultivate an environment for innovation and collaboration
 - Pushes the boundaries of the state of the art
 - Contributing to ongoing open-source research projects
- Communication: presenting your work to your peers and giving constructive feedback to improve other's work
- Reproducibility: delivering your work such that others can build on it

- University plagiarism policy
 - <https://www.in.tum.de/en/current-students/administrative-matters/student-code-of-conduct/>
- Decorum
 - Promote freedom of thoughts and open exchange of ideas
 - Cultivate dignity, understanding and mutual respect, and embrace diversity
 - Racism and bullying will not be tolerated

Interested?

Matching platform

Welcome to the Matching platform matching.in.tum.de/!

Dear students,

we changed the name of the course "Seminar: Recent advances in Computer Systems", for consistency reasons.
The new name are "Seminar: Hot Topics in Computer Systems", now.

Login with your TUM identifier.

 TUM login

Login for exchange students
(without TUM identifier)

 Exchange student login

Any questions? Visit the FAQs!

 FAQs

Sign up on the TUM matching platform

- Ilya Meignan--Masson
 - ilya.meignan-masson@tum.de
- Prof. Pramod Bhatotia
 - pramod.bhatotia@tum.de
- **All course information:** <https://github.com/TUM-DSE/sys-lab>



Workspace: <http://ls1-courses-tum.slack.com/>

Channel: #ws-24-sys-lab

Join us with TUM email address (@tum.de)