Introduction & Organization

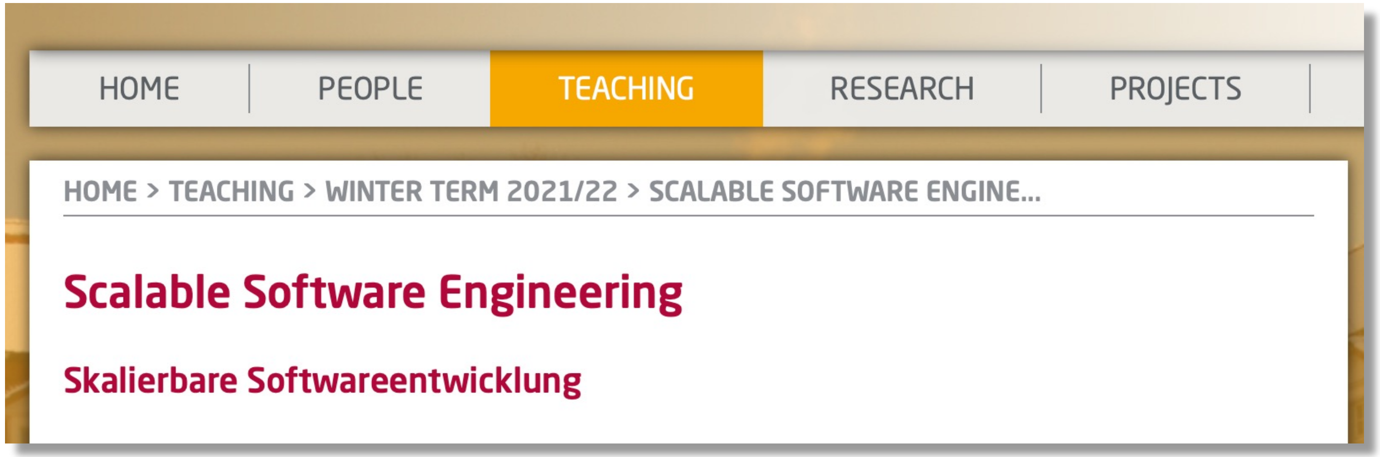
Scalable Software Engineering
WS 2020/21

Enterprise Platform and Integration Concepts

Image by *Four Bricks Tall* on flickr: https://www.flickr.com/photos/fourbrickstall/48749903392 (CC BY-NC-ND 2.0)

Introduction: Hello! 👋

- **Welcome** to Scalable Software Engineering!
- **We’re excited to have you all participate!**
- This course is based largely on prev. “Software Engineering II” course
- We focus on practical Agile software development in cooperating teams
- All details/slides on website (we'll update as soon as possible):
  https://hpi.de/plattner/teaching/winter-term-2021-22/scalable-software-engineering.html

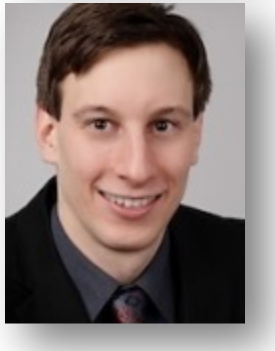


HOME > TEACHING > WINTER TERM 2021/22 > SCALABLE SOFTWARE ENGINE...

Scalable Software Engineering

Skalierbare Softwareentwicklung

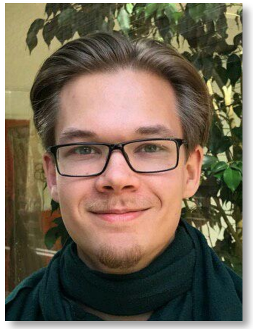
Introduction: Participants



Teaching Team

- Michael Perscheid (michael.perscheid@hpi.de)
- Christoph Matthies (christoph.matthies@hpi.de)
- Ralf Teusner (ralf.teusner@hpi.de)
- Rainer Schlosser (rainer.schlosser@hpi.de)
- Lukas Böhme

- **Tutors:** Paula Klinke, Luc Prestin, Sandro Speh, Gritta Weisheit, Jost Götte

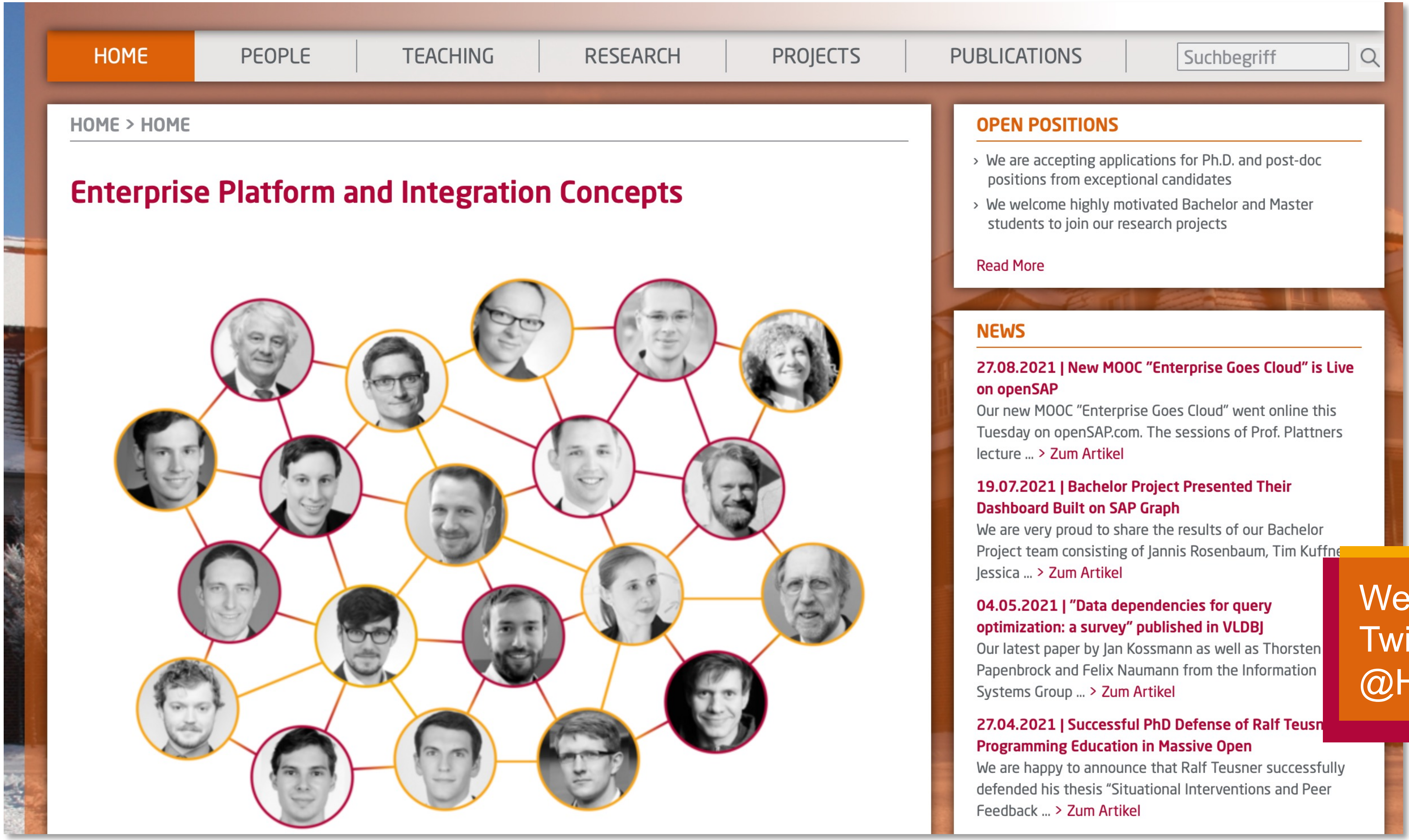


Paula will be 100% remote

Students

- **You!** Without your participation this course won't work!

Introduction: EPIC Chair



Enterprise Platform and Integration Concepts

OPEN POSITIONS

- We are accepting applications for Ph.D. and post-doc positions from exceptional candidates
- We welcome highly motivated Bachelor and Master students to join our research projects

Read More

NEWS

27.08.2021 | New MOOC "Enterprise Goes Cloud" is Live on openSAP
Our new MOOC "Enterprise Goes Cloud" went online this Tuesday on openSAP.com. The sessions of Prof. Plattners lecture ... > Zum Artikel

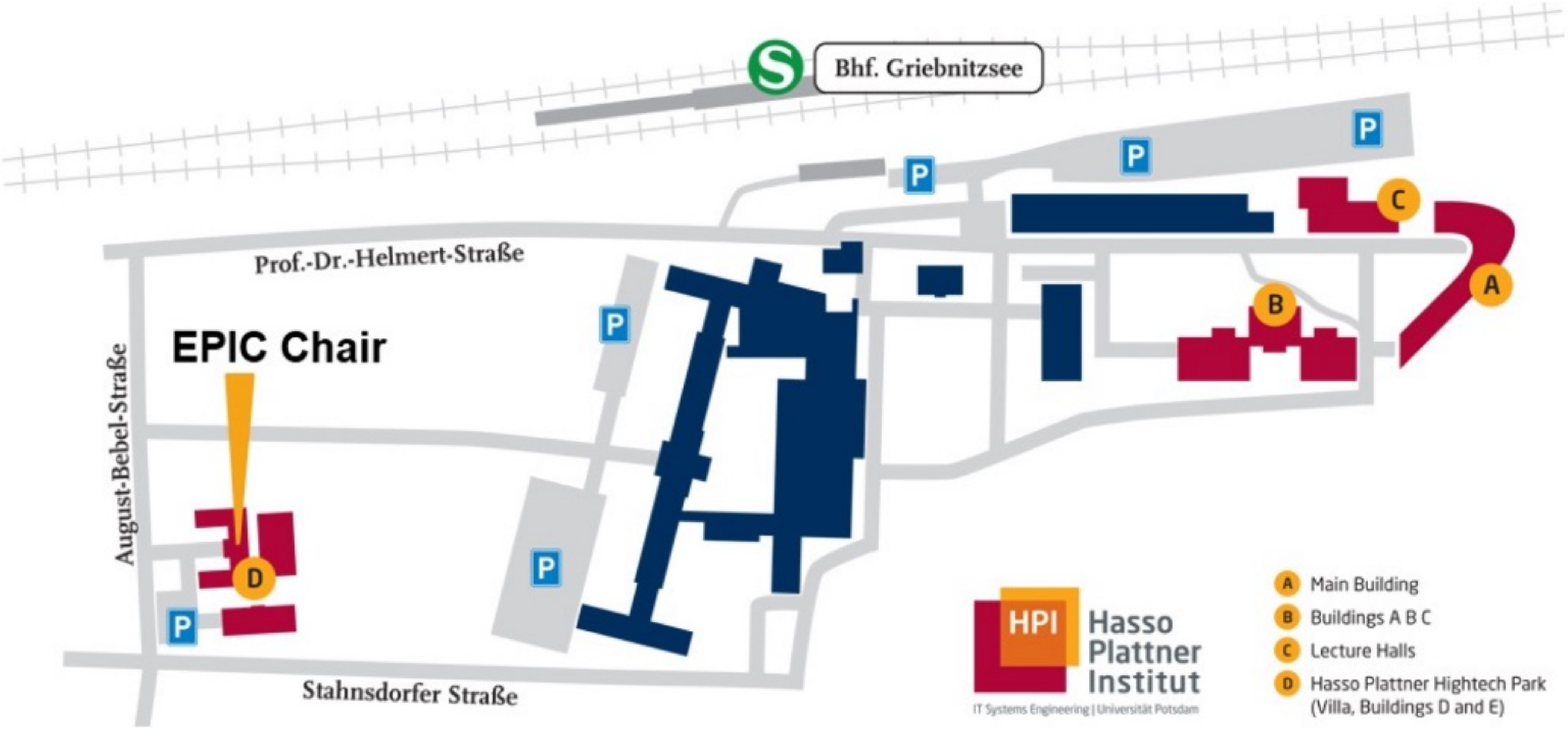
19.07.2021 | Bachelor Project Presented Their Dashboard Built on SAP Graph
We are very proud to share the results of our Bachelor Project team consisting of Jannis Rosenbaum, Tim Kuffne Jessica ... > Zum Artikel

04.05.2021 | "Data dependencies for query optimization: a survey" published in VLDBJ
Our latest paper by Jan Kossmann as well as Thorsten Papenbrock and Felix Naumann from the Information Systems Group ... > Zum Artikel

27.04.2021 | Successful PhD Defense of Ralf Teusn Programming Education in Massive Open
We are happy to announce that Ralf Teusner successfully defended his thesis "Situational Interventions and Peer Feedback ... > Zum Artikel

We also have a Twitter account!
@HPI_EPIC

Introduction: EPIC Chair



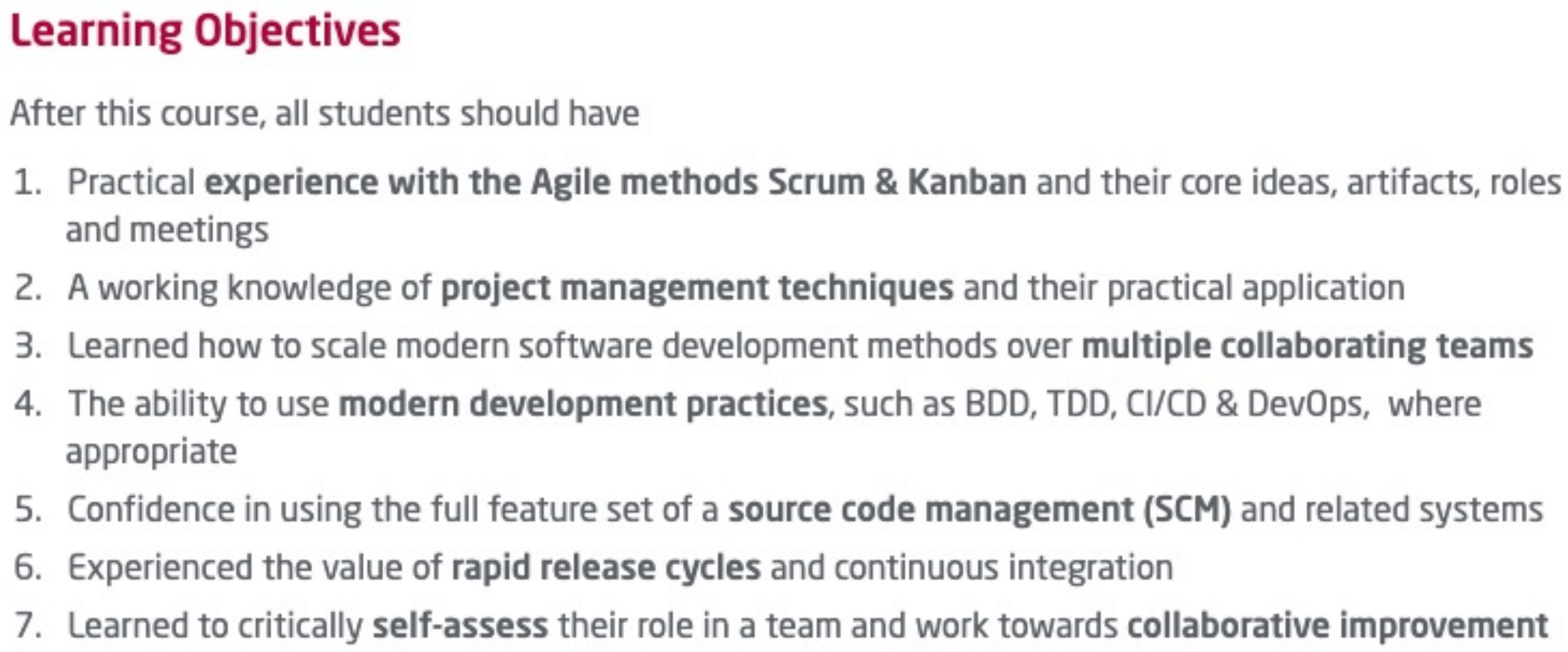
Introduction: You

- 3rd semester? 5th semester? 1st semester?! Not HPI?
- What are your **previous experiences**...
  - concerning software development team work?
  - concerning web development?

- What are your **expectations for this course**?
  - What do you hope to learn & experience?
  - What is your personal goal?

What is Scalable Software Engineering?

- This is a **project course**
- Regular lectures, but focus is on practical work in teams
- You will learn through **experimentation and trying out** collaboration techniques
- **Team meetings are vital**, need to make time for them



Learning Objectives

After this course, all students should have

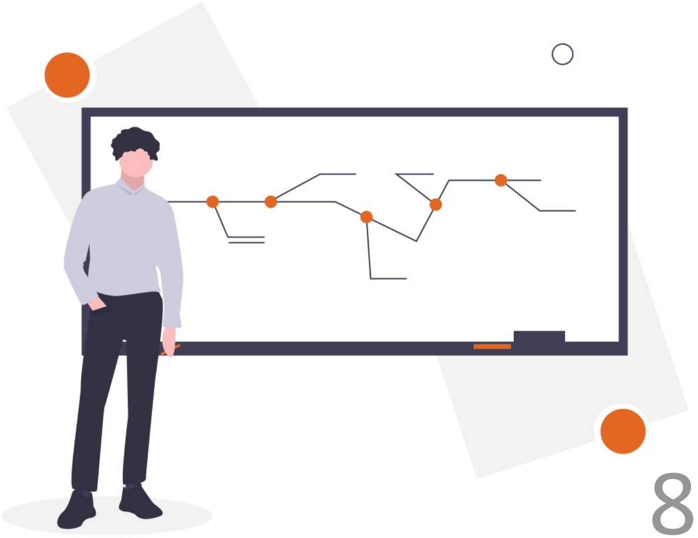
1. Practical **experience with the Agile methods Scrum & Kanban** and their core ideas, artifacts, roles and meetings
2. A working knowledge of **project management techniques** and their practical application
3. Learned how to scale modern software development methods over **multiple collaborating teams**
4. The ability to use **modern development practices**, such as BDD, TDD, CI/CD & DevOps, where appropriate
5. Confidence in using the full feature set of a **source code management (SCM)** and related systems
6. Experienced the value of **rapid release cycles** and continuous integration
7. Learned to critically **self-assess** their role in a team and work towards **collaborative improvement**

What is Scalable Software Engineering?

Lecture

- Scrum and Agile practices in large teams
- Requirements management
- Behavior-Driven-Development
- Project Management
- Development tools
- Agile methods beyond Scrum
- Continuous Integration
- DevOps
- Guest lectures

Topics you really want to talk about?

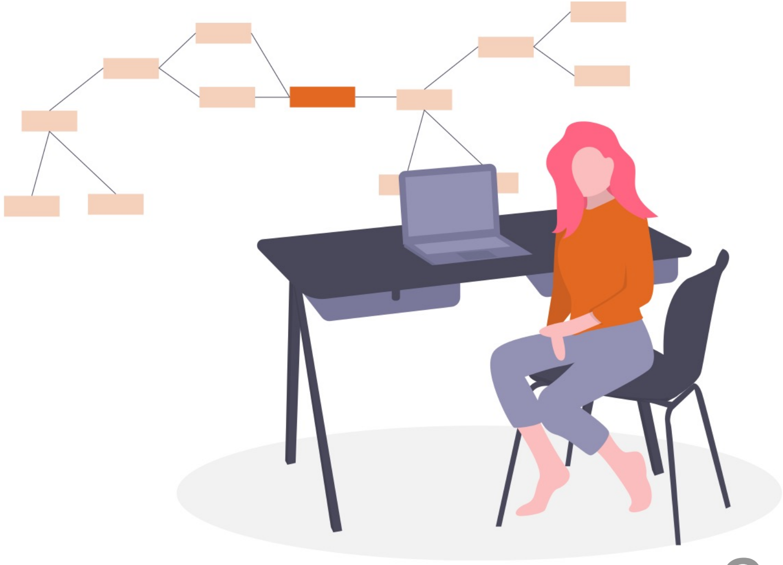


What is Scalable Software Engineering?

Software Project

- Two parallel software projects (of multiple teams) with same requirements
- **You influence and organize the project!**
- Realistic (coordination) challenges and problems
- Open source on GitHub (MIT license), **your contributions are public**
- Application deployed and hosted publicly

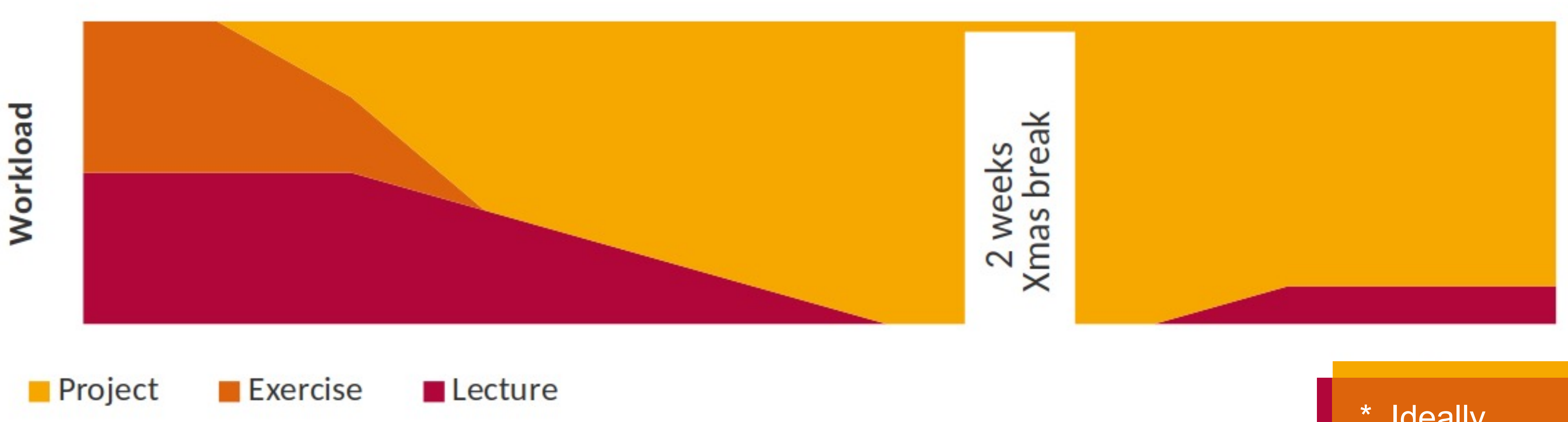
Have you contributed to open-source projects before?



Course Structure

Time management

- **Personal time management is part of the experience**
- One fifth of the week
- Overtime discouraged



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* Ideally

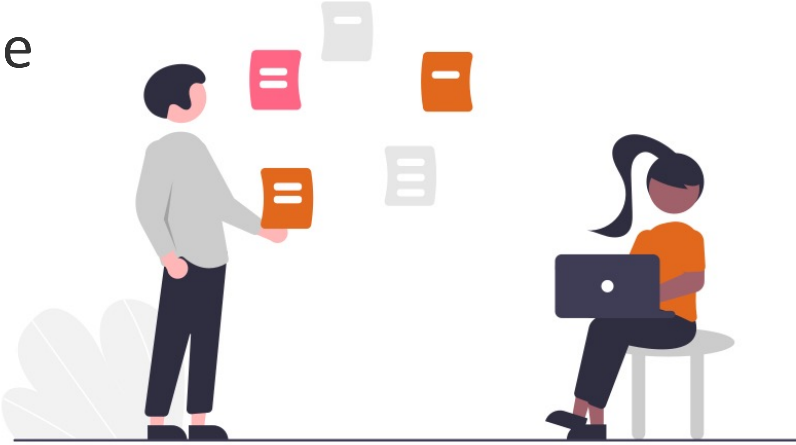
Organization

Prerequisites

- Software Architecture and Software Engineering I are highly recommended
- **Interest in learning and working in project teams**

Course

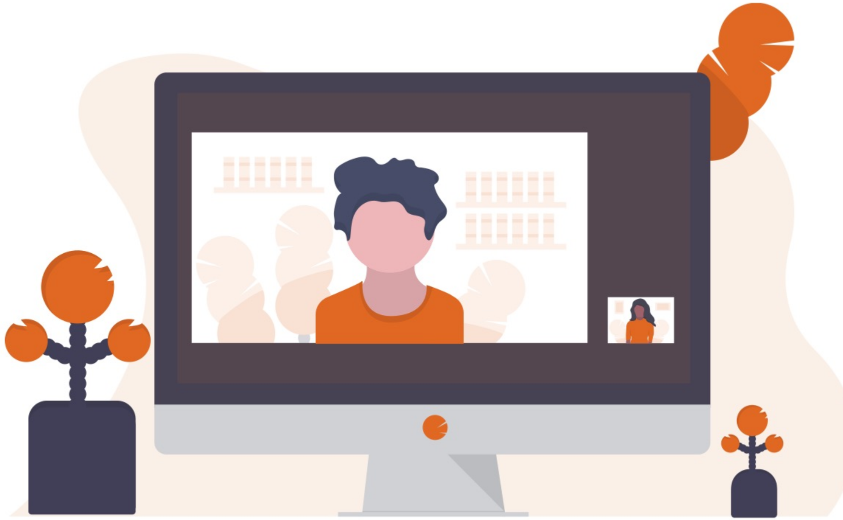
- 4 SWS (≈8h work per week **including lectures**)
  - □ Some lecture slots will be used for more group work time
  - □ 6 ECTS credit points (graded)



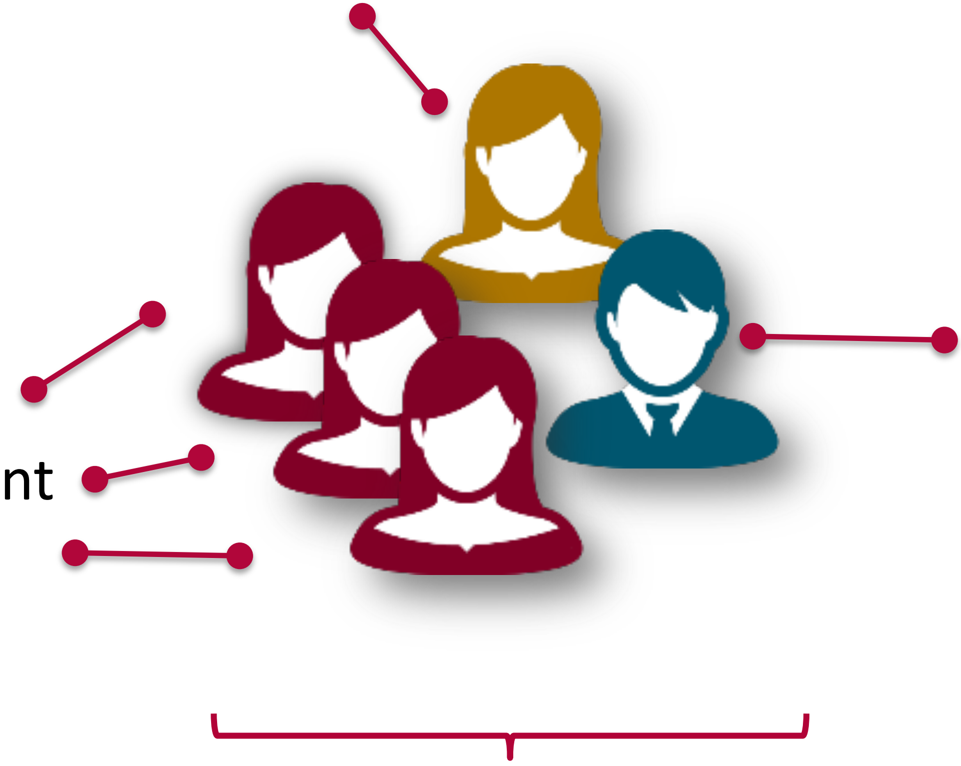
Organization

Virtualization

- We will try to stream lectures as best we can
- Interactivity and discussions might be easier in person
- If necessary, later lectures might be completely virtual



SSE Team Setup



Product Owner (PO)

Scrum Master (SM)

(also ~½ dev)

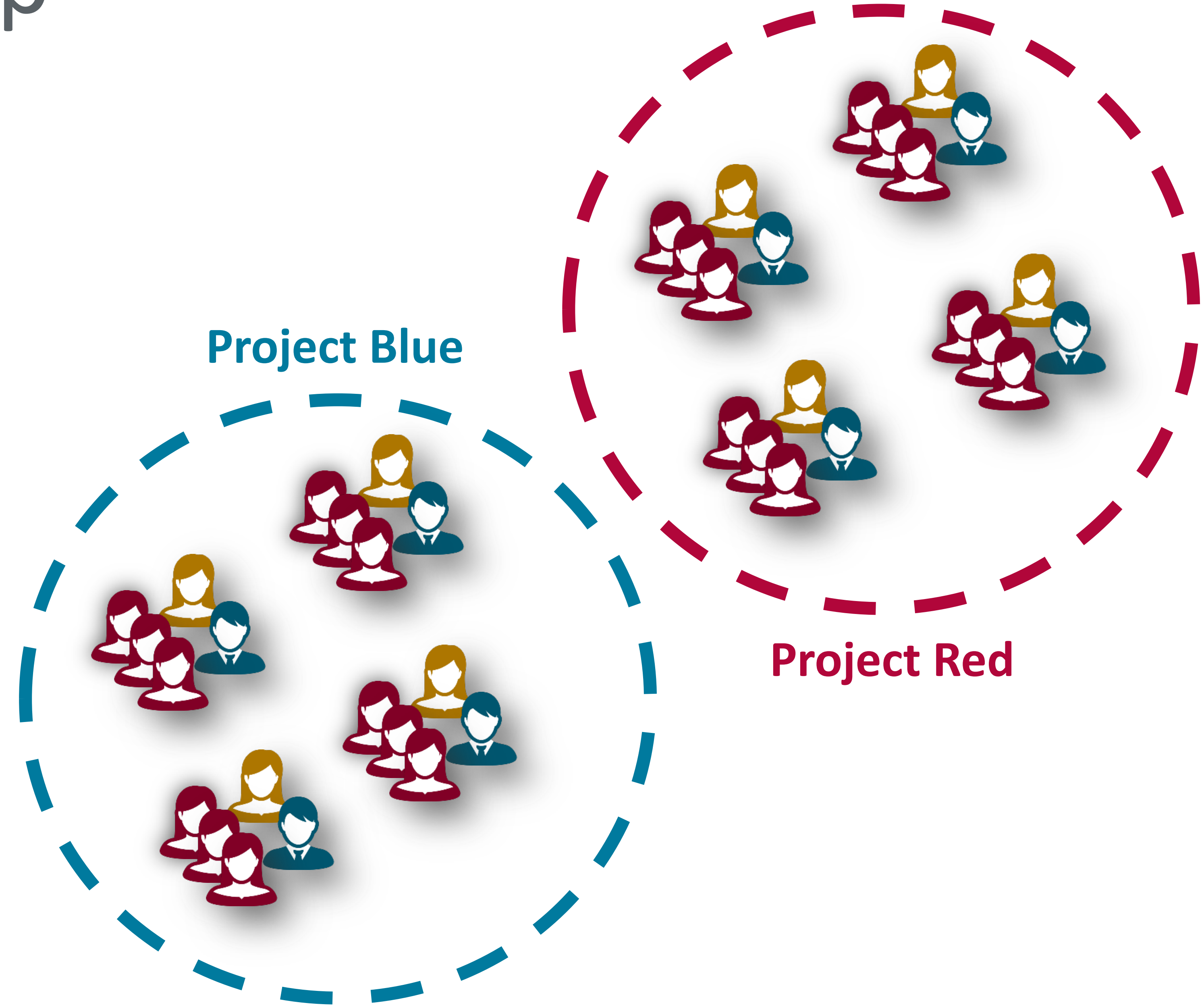
Development Team

Scrum Team

SSE Team Setup

Customer
(has requirements &
represents stakeholders)

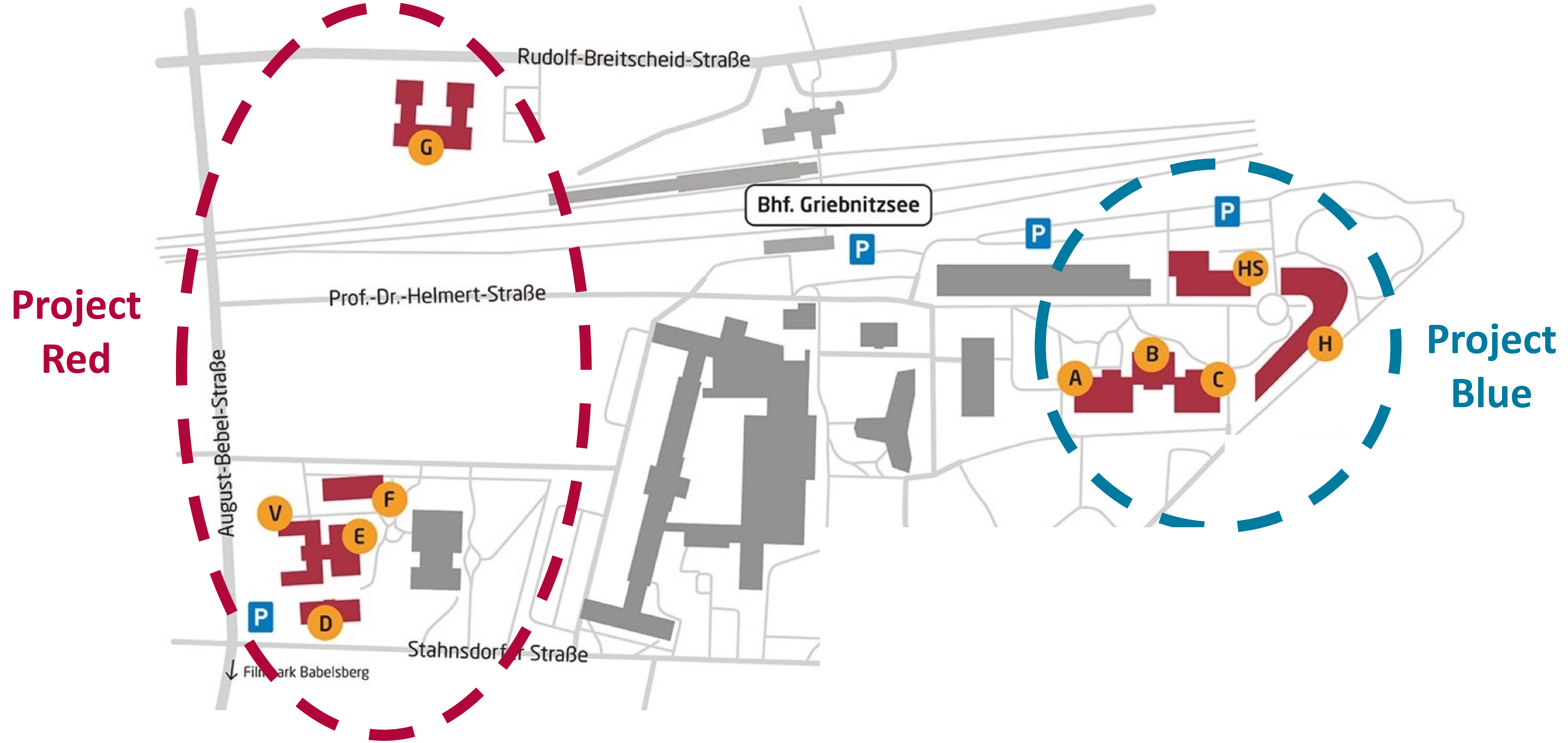
Teaching
Team



Project Blue

Project Red

SSE Team Setup



SSE Team Setup

Project Teams

- **Project Red**
  - □ BA
  - □ BR
  - □ CL
  - □ EB
  - □ FNHP (FN1 & HP1)
- 40 participants

- **Project Blue**
  - □ APMW (AP1 & MW1)
  - □ CMJD (CM1 & JD1 & Others)
  - □ TF (TF1 & TF2)
  - □ RH
  - □ HG (HG1 & Others)
- 39 participants

Surely you can figure out these codename acronyms?!

SSE Team Setup

Teams

- Work in your bachelor teams to minimize contacts
- Smaller BP projects fused into larger ones

Teaching Team

- **Tutors as Agile consultants** (coordinate with them!)
  - Present during all major meetings
  - Open for questions, advice & (crazy) ideas
- Lecturers
  - Help with grand challenges and discussions
  - Workshops with individual roles

Project Setup

Collaborative software development

- **Web development**
- Programming framework: *Ruby on Rails (who has used that?)*
- Minimal core will be provided
- Results will be open source (MIT) on GitHub

Engineering focus

- Understanding of web (MVC) stack and components
- Integration: i.e. avoiding “patchwork” (UI, workflows, data)
- Maintainability of the code base (tests, quality, etc.)
- Functionality *(not on top of the list for a reason)*

Course Schedule

Initial Schedule

- **19.11. Project Kick-Off (Project Vision)**
- Scrum Sprint 1
- Scrum Sprint 2
- Academic Christmas break
- Scrum Sprint 3
- Kanban phase

- Guest lectures
- Interactive workshops
- January: **Intermediate Presentation**
- Last lecture: **Final Project Presentation**

No schedule survives contact with reality

- **Real teamwork brings real challenges**
  - Actually writing a software is vital
  - External constraints may change
- Schedule will adapt
  - Also according to your suggestions

Next Steps (IMPORTANT STUFF)

Team setup

- **Decide** Product Owner & Scrum Master **role**
- **Join** MS Teams (link on website)
- Three suggestions for **weekly meeting slot** (virtual or in person?)
- Mail us this info!

Get started in Ruby (on Rails)

- Setup your **GitHub account**
- Tuesday next week: **Start the exercise!** (link on website)
- Participation by Product Owners is optional

Product Owners: Get started with Product Envisioning

- Suggestions for **first (virtual) customer meeting date**

Please set your real (first) name in your GH profile, makes it easier for others to interact

Literature

Agile literature

- Verner, June M. et al. "In the 25 years since The Mythical Man-Month what have we learned about project management?." *Information and Software Technology* (1999)
- Meyer, Bertrand. *Agile!: The Good, the Hype and the Ugly*. Springer Science & Business Media, 2014.
- Kniberg, Henrik. *Scrum and XP from the Trenches*. Lulu.com, 2015.
- Sutherland, Jeff, and Ken Schwaber. *The Scrum Guide - The Definitive Guide to Scrum: The Rules of the Game. Scrum.org* (2020).

If you can't find these items in the library or online, please send us an email. We might be able to help.

The Scrum Guide is highly recommended