

**Überzeugend Präsentieren – Der erste Eindruck zählt (Einsteiger)**  
**Dieball**  
12./13.Mrz 2020 H 2.57  
31.3/02.4.2020 H 2.57

**Lerntechniken und Strategien zur Prüfungsvorbereitung**  
**Potzner**  
26.-28.Mrz 2020 H 2.57

**Lehrveranstaltungen BA IT-SE**  
Wintersemester 2019/20  
(Vorlesungszeitraum 14.10.2019 - 07.02.2020)  
Stand: Stand 16. Oktober 2019

**D School Kurse Design Thinking**  
Siehe Web-Seite  
Weinberg/Nicolai  
D-School

**Projektentwicklung und Management**  
Durchgänge: **Götzel**  
05.-07.Mrz; 9.-11.Mrz; 12.-13.Mrz 2020  
H E 51/52  
Durchgänge: **Schmitz/Kulesza**  
16.-21.Mrz; 30./31./01.April 2020  
H E 51/52  
(Zuordnungen und Räume s. auch HPI-Website)

	1. Sem.		3. Sem.		5. Sem.													
	Mo						Di			Mi			Do			Fr		
9:00																		
10:00	Einführung in die Programmiertechnik I Baudisch HS 1	POIS (Prozessorientierte Informat.-Systeme) Weske, Remy HS 3	How to Build Your Own MOOC Meinel H-2.58	Übung Mod I A 1.1 A 1.2	Betriebsysteme I Polze HS 1	Visual Media Enhancement Trapp, Semmo, Pasewaldt, Shekhar H 2.58	Modellierungssprachen und Formalismen Giese HS 1	How to Build Your Own MOOC Am 16.Okt/23.Okt Meinel H-2.58	Theoretische Informatik I Friedrich HS 3	Übung Mathe I A-2.1 A-2.2	Softwarearchitektur Hirschfeld HS 3	Übung Softwaretechnik II (Raum nach Absprache)	Internet Security - Weaknesses and Targets Cheng H E 11/12/13	Übung Mathe I A 1.2	Algorithmic Problem Solving Kötzing, Lenzner HS 2 Am 18.Okt in HS 1	Building Interactive Devices Baudisch H 2.57	Softwaretechnik II Uflacker HS 3	
11:00	Formalisierung und Formalis Naumann/ HS 1	Authentifizierung Lorenz/ HS 2	Web-Programme und Web-Frameworks Meinel/ H-2.57	Mathematik I – Diskrete Strukturen und Logik Meinel/Tietz/ Bethge HS 1 Bitte HPI-Website beachten	Softwarearchitektur Hirschfeld HS 3	Game Programming Döllner Limberger, H 2.57	Mathematik I – Diskrete Strukturen und Logik Meinel/Tietz/ Bethge HS 1 Bitte HPI-Website beachten	Datenbank-systeme II Naumann/ Bleifuß HS 3	POIS (Prozessorientierte Informat.-Systeme) Weske, Rem HS 2	HCI Project Seminar: Software Systems for 3D printing, Virtual reality, and Haptics Baudisch H-2.57	Einführung in die Programmiertechnik I Baudisch HS 3	Betriebs-systeme I Polze HS 1	Theorie der Künstl. Intelligenz Kötzing A 2.2	Visual Media Enhancement Trapp, Semmo, Pasewaldt, Shekhar A 2.1	Recht für Ingenieure I Krohn / Habbe HS 1	Building Interactive Devices Baudisch H 2.57	Softwaretechnik II Uflacker HS 3	
13:00	D-School Advanced Track						D-School Basic Track						D-School Basic Track					

**Software Engineering II**  
**Introduction and Organization**

Software Engineering II -  
Agile Software Development in Large Teams  
WS 2019/20

Enterprise Platform and Integration Concepts Group

# Agenda



1. Organization
2. High-level Overview of SWT2
3. Project
4. Basic IT Infrastructure
5. Lectures
6. Literature

[HOME](#)[PEOPLE](#)[TEACHING](#)[RESEARCH](#)[PROJECTS](#)[PUBLICATIONS](#)

## Christoph Matthies

### Research Assistant, PhD Student



Phone: +49 (331) 5509-1329

Email: [christoph.matthies\(at\)hpi.de](mailto:christoph.matthies(at)hpi.de)

Address: August-Bebel-Str. 88, 14482 Potsdam

Room: V-2.02

Links: [dblp](#), [Google Scholar](#), [arXiv](#), [ResearchGate](#), [Publons](#), [SpeakerDeck](#)

### Research

#### Data-Informed Agile Software Process Improvement

Modern software is built by collaborating teams. Team members need to practice and uphold an effective development process that enables project success. In popular Agile process frameworks, such as Scrum, work processes are maintained through iterative process improvement cycles and retrospection meetings. However, the details of how improvement steps can be implemented, tracked and evaluated are not specified. This requires teams to rely on their subjective perceptions and experiences. It is, therefore, challenging to assess the impact of applied improvement action, such as switching the employed project management software.

We tackle these challenges by supplementing existing Agile methods with improvement approaches based on team data. Our approach includes gathering empirical data on the perceptions of team members, as well as deriving insights from teams' project data. This data, such as commits or work documentation, are already being produced during regular development work. By aggregating, linking and analyzing the

#### Contact:

Dr. Matthias Uflacker

Chair Representative

Tel.: +49 (331) 5509-566

E-Mail: [matthias.uflacker\(at\)hpi.de](mailto:matthias.uflacker(at)hpi.de)

#### Office:

Room: V-2.12

Tel.: +49 (331) 5509-560

Fax: +49 (331) 5509-579

E-Mail: [office-epic\(at\)hpi.de](mailto:office-epic(at)hpi.de)

[Contact Details](#)

### NEWS

#### 14.10.2019 | 2019 Bachelor's Project featured in SAP TechEd Keynote

The results of our 2019 Bachelor's project were featured in the keynote given by SAP Chief ... [> more](#)

#### 23.07.2019 | Presentation of 2019 Bachelor's Project

The students of the 2019 EPIC bachelor's project developed a platform that helps employees tackle ... [> more](#)

#### 12.06.2019 | Global Team-based Innovation Final Presentations

Another successful year of our course "Global Team-Based Innovation (GTI)" is coming to an end and ... [> more](#)

#### 25.02.2019 | Best Paper Award received at ICORES 2019

We are happy to announce that the paper "Stochastic Dynamic Pricing with Strategic Customers and ... [> more](#)

# EPIC Chair



## Campus Map

Our research group is located on HPI Campus II. See the following map for details or [click here](#) for detailed directions to the Hasso Plattner Institute.

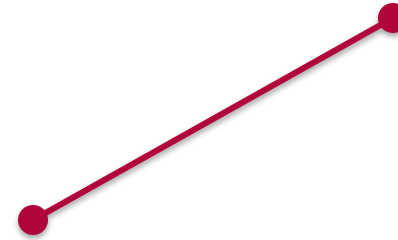


# Organization



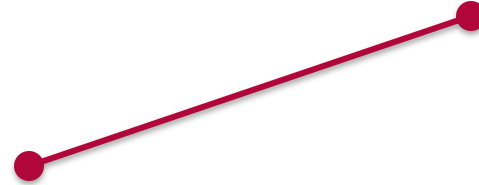
## Responsible

- Dr. Matthias Uflacker ([matthias.uflacker@hpi.de](mailto:matthias.uflacker@hpi.de))



## Teaching Team ([swt2\\_19\\_orga@lists.myhpi.de](mailto:swt2_19_orga@lists.myhpi.de))

- Christoph Matthies ([christoph.matthies@hpi.de](mailto:christoph.matthies@hpi.de))
- Ralf Teusner ([ralf.teusner@hpi.de](mailto:ralf.teusner@hpi.de))
- Frederike Ramin ([frederike.ramin@student.hpi.de](mailto:frederike.ramin@student.hpi.de))



## Students

- You! Nothing to organize without your participation ([swt2\\_19@lists.myhpi.de](mailto:swt2_19@lists.myhpi.de))

# Who Are You?



- 3rd semester? 5th semester? 1 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?
  - What do you hope to experience?
  - What is your personal goal?

[https://docs.google.com/document/d/1QR4cuFVSB\\_1ZcAmMe0-ODfWUS63Rgi4ymaqYSWc0L3Q/edit?usp=sharing](https://docs.google.com/document/d/1QR4cuFVSB_1ZcAmMe0-ODfWUS63Rgi4ymaqYSWc0L3Q/edit?usp=sharing)

# What is SWT II?

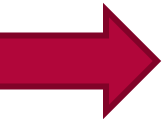


- This is a project course!
- The focus is on practical work in teams
- You will learn through experimentation and trying out collaboration techniques
- Team meetings are vital

## Learning Objectives

After this course, all students should have

1. **Experience with Scrum** and all of its artefacts and meetings
2. Learned how to scale Scrum over **multiple collaborating teams**
3. The ability to use **Agile development practices**, such as BDD and TDD, where appropriate
4. Confidence in using the full feature set of a **source code management (SCM) system**
5. Experienced the value of rapid release cycles and **continuous integration (CI)**
6. Learned to critically **self-assess** their role in a team



# SWTII Contents



## Lecture

- Scaling Scrum to large teams
- Guest lectures
- Agile methodology
- Requirements engineering
- BDD/TDD
- Agile in enterprise settings
- Version control (and conflicts!)
- Continuous Integration
- DevOps



## Software project

- One single project for all participants, entire course
- “Realistic” settings, realistic challenges and problems
- Development tools: Issue tracking, quality control
- Open source on GitHub, your contributions are public
- Deployment and hosting on the Internet

# Learning Objectives



**multi-team-setups**  
**Git**  
**Scrum**  
**Deployment**  
**time-management**  
**Rails**  
**TDD**  
**BDD**  
**requirements-prioritization**

# Example of Previous Results



The screenshot displays the HPI Connect Jobportal interface. At the top, there is a navigation bar with the Hasso Plattner Institut logo, social media icons, and language options (DE | EN). Below this is a secondary navigation bar with tabs for 'JOB PORTAL', 'JOB OFFERS', 'EMPLOYERS', and 'STUDENTS'. The main content area is titled 'Job offers' and features a list of job listings. Each listing includes the job title, type of position, a logo, and the start date. To the right of the listings is a sidebar with search and filter options, including 'Sort by', 'Search for', 'Filter by', and various dropdown menus for Employer, Region, Category, and Degree. The background of the page features a blue-tinted image of graduates in caps and gowns.

Job Title	Type	Logo	Start Date
MailTest	Traineeship	MailTest	starts 2014-07-18
test	Traineeship	test	starts 2014-07-18
Frontend Entwickler - JavaScript, HTML (m/w)	Working student	Signavio GmbH	starts 2014-05-29
PHP Backend developer m/w	Job for graduates	bloglober GmbH	starts 2014-05-29
Studentische Hilfskräfte (m/w) für das Projekt Tele-Board gesucht!	Working student	Hasso Plattner Institut	starts 2014-05-18

HPI Connect Jobportal

## General

### Further comments

General remarks

- Das Projekt war eine Menge arbeit, aber ich bin froh es gemacht zu haben und habe eine Menge gelernt.
- Insgesamt eine richtig gute und lehrreiche Veranstaltung! Weiter so!



### Total grade

Which grade would you give the course in total?

 21



1.5

# FAQ: A lot of work?



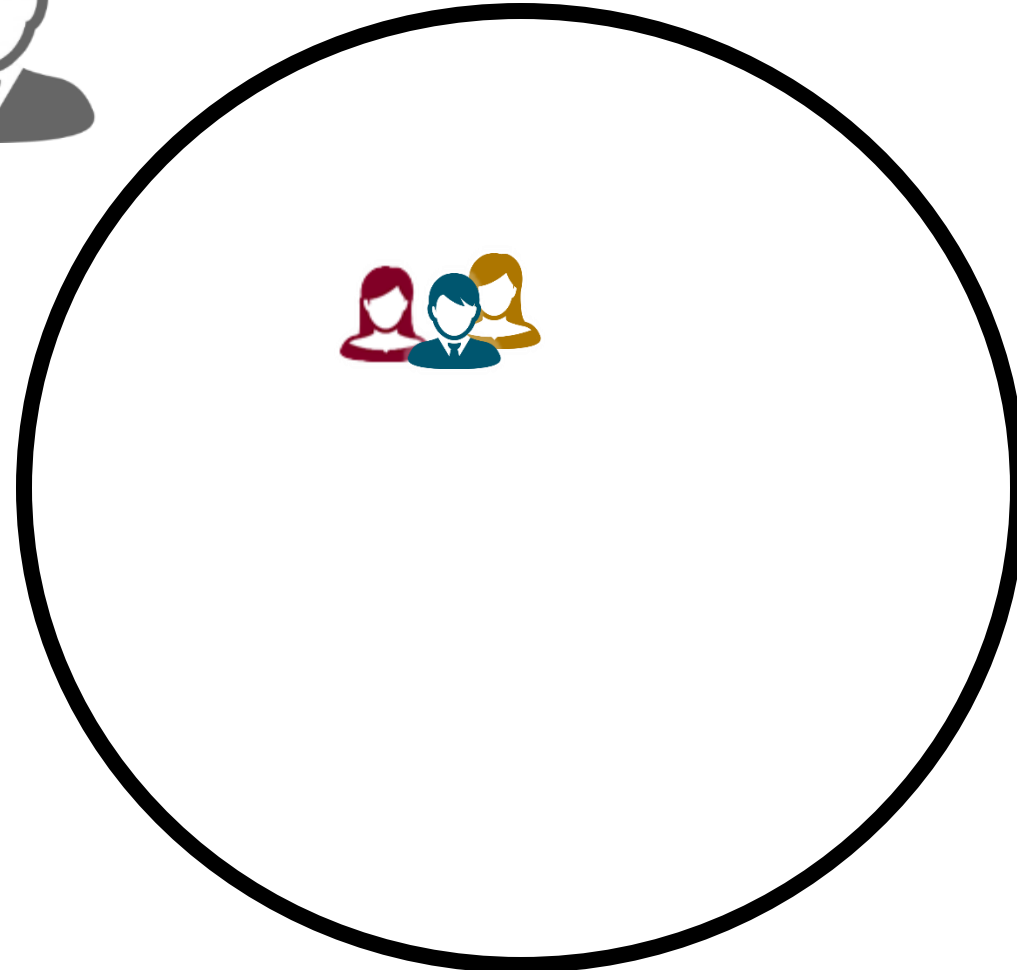
- One fifth of week
- Overtime discouraged



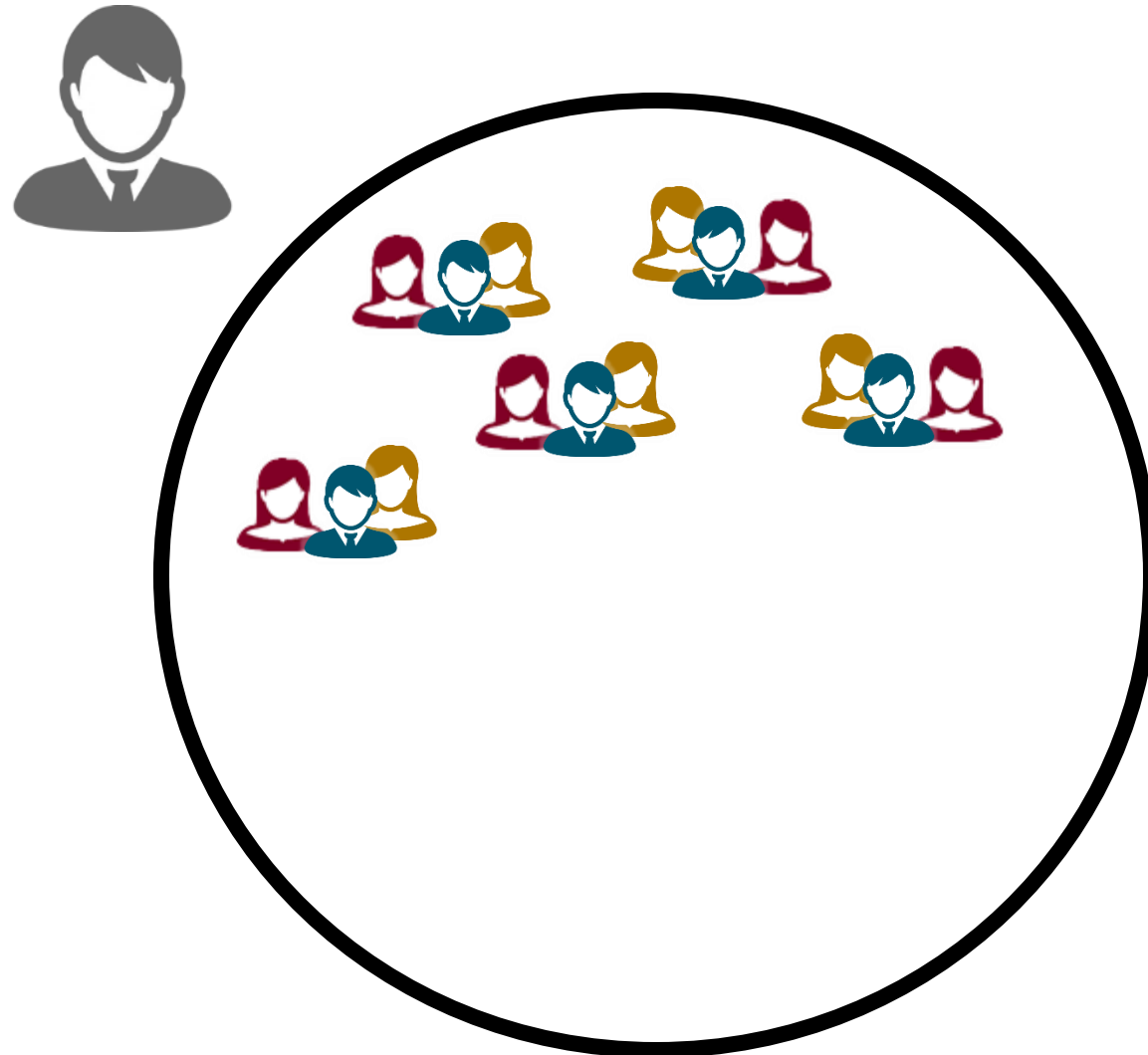
# High-level Overview of SWT II



# High-level Overview of SWT II

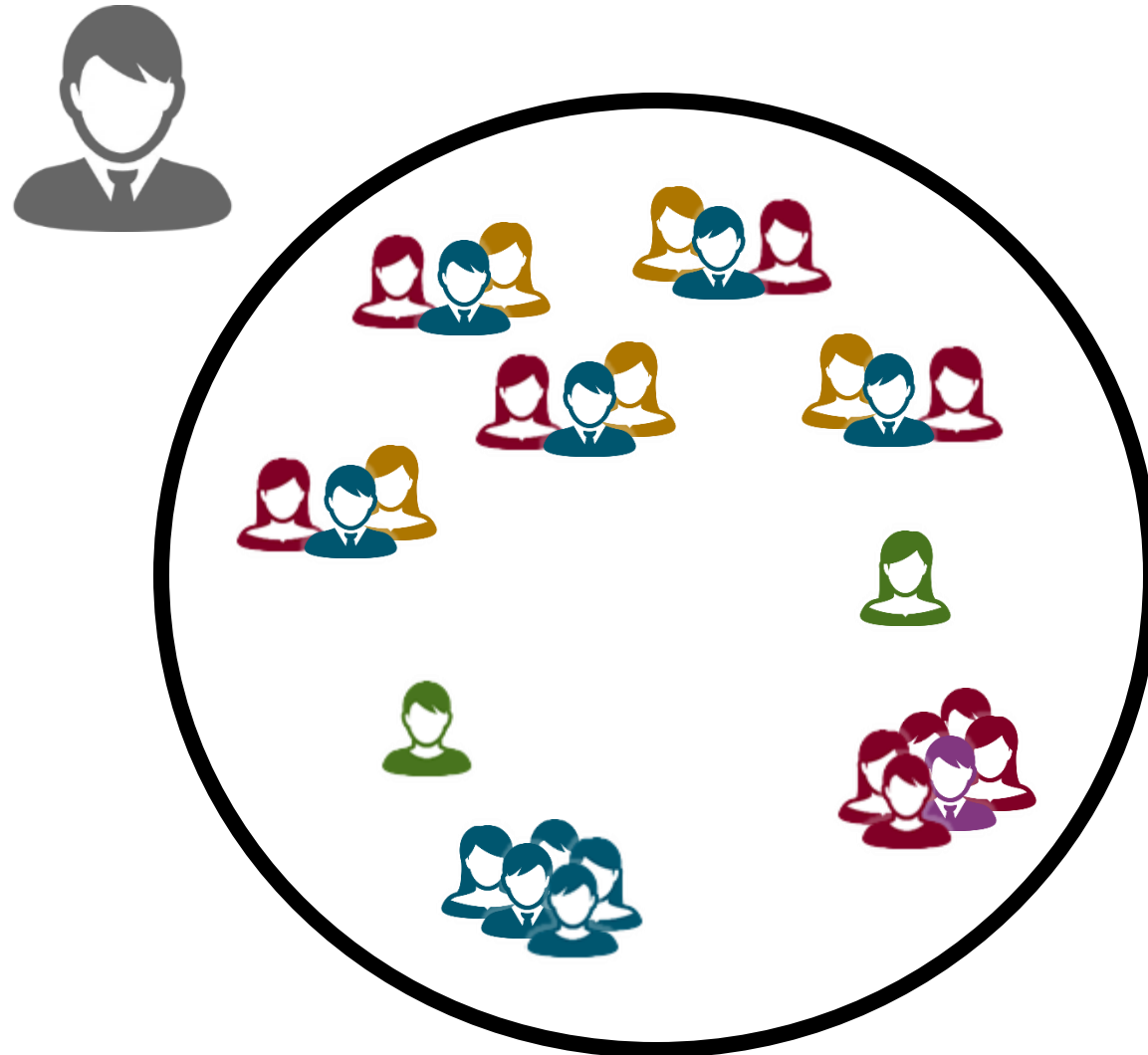


# High-level Overview of SWT II





# High-level Overview of SWT II



# Organization



## Prerequisites

- Undergraduate program
- Softwaretechnik I
- Interest in learning and working in project teams

## Class

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

# Organization



## Important dates

- Enrollment until October 25
- Preparation exercise (will be released on October 25th, link see website)
  - Deadline Nov 8, 15:00 pm CET
- Project Kick-off November 8

## Lectures

- Friday, 09:15 – 10:45, HS3
- Friday, 11:00 – 12:30, HS3

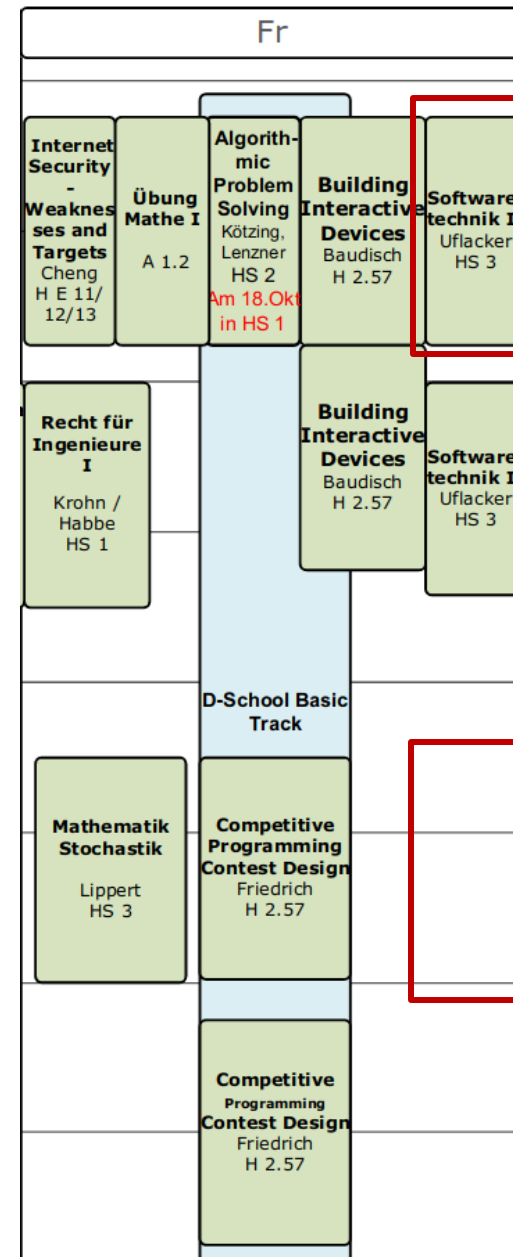
## Web

<https://hpi.de/plattner/teaching/winter-term-201920/softwaretechnik-ii.html>

# Lecture Slots



Who wants this change?



# Meeting Slots

Bachelor project rooms?  
Rooms in the Villa can be provided

Do					Fr				
Übung Mathe I A-2.1 A-2.2		Software-architektur Hirschfeld HS 3		Übung Software-technik II (Raum nach Absprache)	Internet Security - Weaknesses and Targets Cheng H E 11/12/13	Übung Mathe I A 1.2	Algorithmic Problem Solving Kötzing, Lenzner HS 2 <i>Am 18.Okt in HS 1</i>	Building Interactive Devices Baudisch H 2.57	Software-technik II Uflacker HS 3
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D-School									

## Grading

The final grading is determined by

- > 30%: *oral / written exam*
- > 45%: *usage of methods* and concepts presented in the lecture, such as Scrum, BDD, TDD, SCM, and CI
- > 25%: *software development results* (team mark)

Completion of the introductory exercise is mandatory for passing the course.

## Exam

The exams are scheduled for **17th and 18th February 2020**

- Product Owners are exempt from the exercise

# Working in Teams



Participants form **teams of 4-7** participants

## Each team consists of

- 1 Product Owner (PO)
- ½ Scrum Master (SM)
- Several team members

# Working in Teams



- Mail your team choice to [swt2\\_19\\_orga@lists.myhpi.de](mailto:swt2_19_orga@lists.myhpi.de)
  - Until **Sunday, October 27**
  - Who will be PO and SM?
  - Three suggestions for weekly meeting
  
- POs: mail us suggestions for **first customer meeting**
  - Between October 28 and November 1



# Teaching Team Roles



The teaching team provides

- **Customer**

- Represents the clients of the developed software
  - Has ideas and requirements that need to be fulfilled

- **Chief Product Owner**

- Main contact point for team POs
- Helps in dealing with customer requirements & process

- **Tutors** as Scrum consultants

- Present during meetings
- Open for questions, advice & ideas
- Coordinate with them!

# Content of the Project



## Collaborative software development

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

## Engineering Focus

- Understanding of web stack and components (MVC)
- Functionality
- Avoiding “patchwork” (UI, Workflows, Data)
- Maintainability of the Code Base (Tests, Quality, etc.)

# Project: HPI Lecture Tool



# Extract of Possible Requirements



## Support lecturers

- Support with taking attendance
  - URL / QR code / logging in with your HPI token?
- Allow rating / receive feedback, answering questions
- Support planning with calendars
- Polls
- Select needed features for a specific course

## Support students

- Ask questions (anonymous?)
- Overview of attended courses
- Take collaborative notes

## Change and Adaptation

- Requirements Engineering is part of this course
- Discussion and meetings with the customer
- Requirements might change

# IT Infrastructure – Open Source!



## Infrastructure

**HuBoard**  
**GoogleCalendar**

**CodeSchool**  
**Travis-CI**  
**Heroku**  
**CodeClimate**  
**Github**  
**Mailing-Lists**  
**Gemnasium**

# Communication Channels



## Mailing List

- [swt2\\_19@lists.myhpi.de](mailto:swt2_19@lists.myhpi.de)
- Sign-up!
- Important announcements

## Calendar

- <https://www.google.com/calendar/embed?src=hpi.swt2%40gmail.com&ctz=Europe/Berlin&mode=AGENDA>
- For formal meetings

## Slack

- <https://swtii2019.slack.com/>
- Sign-up!
- Team discussions
- Make a channel for your team
- Coordinate meeting times
- Strongly recommended as a single point of communication

**All links can be found on the website**

## Lecture supports project

- Rails Intro
- Project Intro
- Scrum and multi-team settings
- Project infrastructure in detail
- BDD & TDD (in Rails)
- Code Review, Process Improvement
- Deployment
- Guest Lectures (Industry)

# Rails Exercise



## To get started in Rails...

- Tutorial exercise based on GitHub
- Will be released next week
- **Make a GitHub account** (and try to get a name close to your real name, if you can)

A screenshot of a GitHub repository page. The repository name is 'rails-exercise-18-rteusner' under the organization 'hpi-swt2-exercise'. It shows 5 unwatchers, 0 stars, and 0 forks. The repository was created by GitHub Classroom. It has 18 commits, 1 branch, 0 releases, 3 contributors, and is licensed under MIT. The current branch is 'master'. A recent commit by 'chrisma' to update the README is shown, with the latest commit hash 83cc54e made 3 hours ago. Navigation buttons include 'Code', 'Issues', 'Pull requests', 'Projects', 'Wiki', 'Insights', 'Settings', 'Create new file', 'Upload files', 'Find file', and 'Clone or download'.

hpi-swt2-exercise / rails-exercise-18-rteusner

Unwatch 5 Star 0 Fork 0

Code Issues 0 Pull requests 0 Projects 0 Wiki Insights Settings

rails-exercise-18-rteusner created by GitHub Classroom Edit

Manage topics

18 commits 1 branch 0 releases 3 contributors MIT

Branch: master New pull request Create new file Upload files Find file Clone or download

chrisma Update README Latest commit 83cc54e 3 hours ago



# SWT2 Schedule



## Rough Schedule

- **November 8: Project Kick-Off**
- Nov 11 – Nov 15: Begin of Sprint 1
- Sprint 2
- Sprint 3
- **Mid December: Intermediate Presentation**
- January 2020: Sprint 4
- Last weeks: Kanban Iteration
- **End of semester in February: Final Presentation**

## No schedule survives contact with reality

- **This is a project course**
  - Actually writing a software is vital
  - Real-world scenario will bring real-world issues
- Schedule can adapt
  - Also according to your suggestions

# Schedule

Exercise

Kick-Off

Sprint 1 (2 weeks)

Sprint 2 (2 weeks)

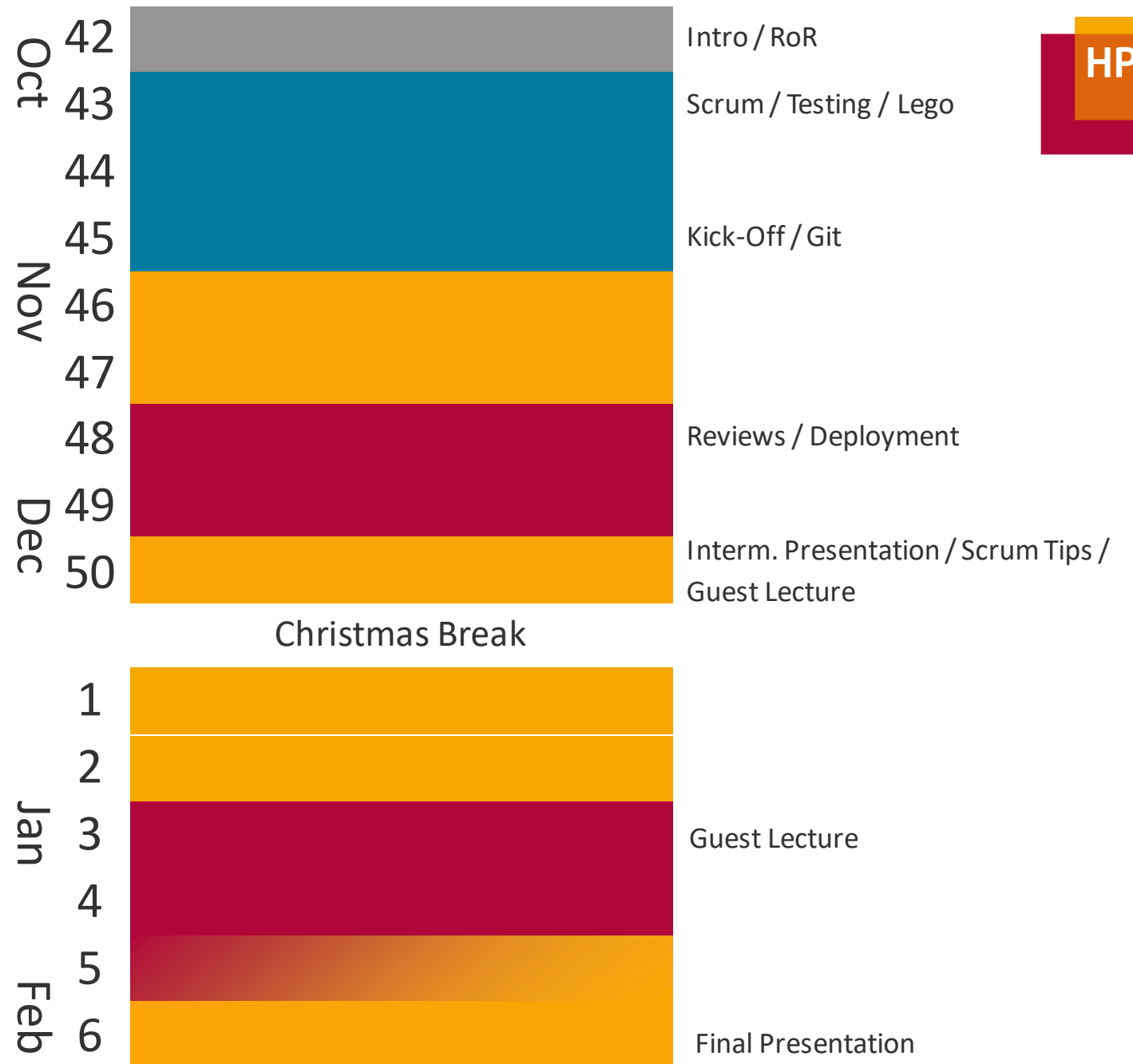
Intermediate Presentation

Sprint 3 (3 weeks)

Sprint 4 (2 weeks)

Kanban Week

Final Presentation



## General 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* (2013).

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

# Next Steps



## What to do next

- **Sign up** for the course!
- Sign up for communication channels
- **Form teams** of 4-7 people (*how many are planning to take part in the course?*)
  - Slack / Email list
  - Email us if you'd like to be assigned
  - Discuss who takes on roles of Product Owner, Scrum Master and developers
- **Find time slots** that work for all team members (default is 09:15 on Thursday)
  - If none can be found, rearrange teams
  - Time for collaborative work is crucial!
- **Send team composition & meeting time slot proposals** to teaching team
- Preparation Ruby on Rails exercise beginning next week

# Software Engineering II

## Introduction and Organization