

Interactive Learning

(Practical Course, Seminar, Contract)

Info Meeting



**Maximilian
Sölch**



**Matthias
Linhuber**



**Ramona
Beinstingel**



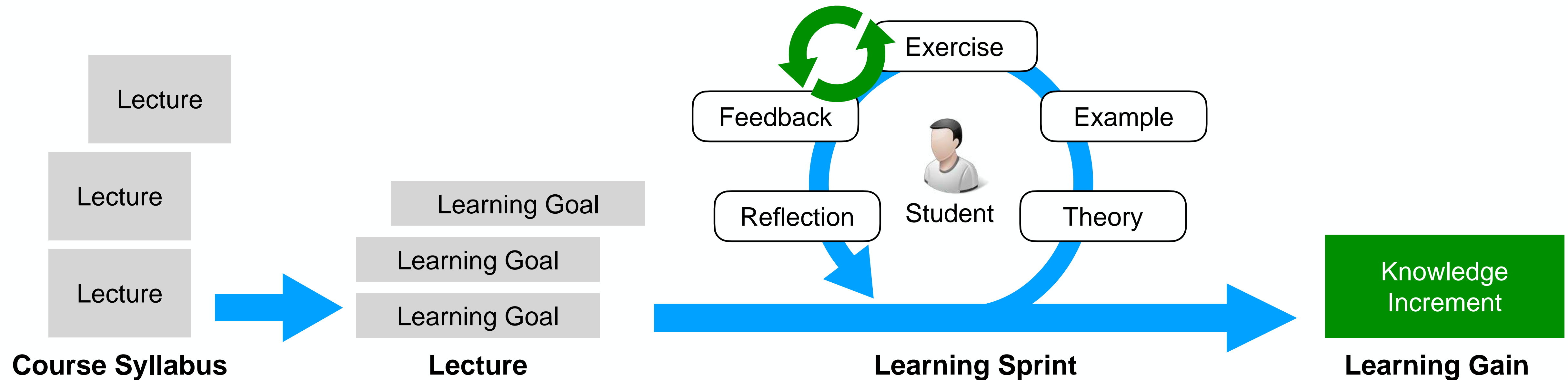
**Prof. Stephan
Krusche**

Our teaching philosophy



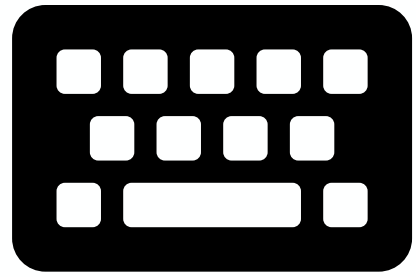
“Tell me and I will forget.
Show me and I will remember.
Involve me and I will understand.
Step back and I will act.”

Continuous Interactive Learning

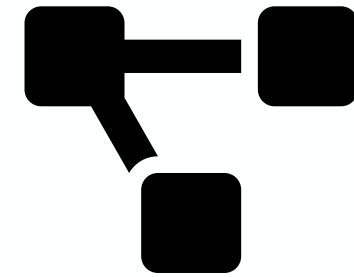


- Learn and exercise small chunks of content in short cycles
- Get guidance and immediate feedback to prevent misconception
- Reflect on the content and increase knowledge incrementally

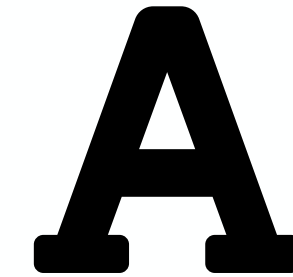
Artemis - interactive learning with automated feedback



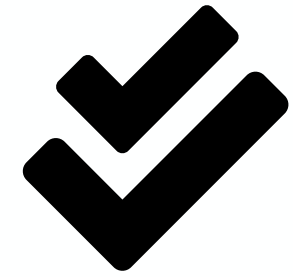
**Programming
exercises**



**Modeling
exercises**



**Text
exercises**



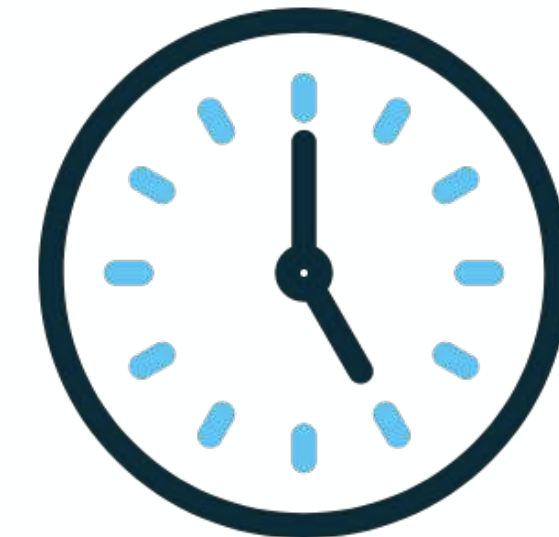
**Quiz
exercises**



Scalability: handle > 200
submissions per second



Usability: beginners
are able to use it



Instant feedback: provide
feedback in real-time

Team exercises | Lectures | Presentations | Exam mode | Questions and answers | Learning analytics

Our mission

- Teach the concepts in an understandable way
- Provide realistic examples and exercises
- Focus on the practical application of knowledge
- Support the students in their problems and questions

Learning goals

- Become familiar with best practices for teaching and learning
- Improve your soft skills (communication, presentation, and team work)
- Apply incremental, agile, and adaptive development methods
- Deepen your knowledge in software engineering (especially requirements engineering and testing)

Participation

1) **Contract:** ~ 900€ salary per month

- **Effort per week:** up to 16 hours (decided on individual basis)
- **Final document:** none
- **Contact:** il.ase@xcit.tum.de

2) **Praktikum (IN0012, IN2106, IN2175, IN4234):** 10 ECTS

- **Effort per week:** ~ 2 days
- **Final document:** project report + presentation
- **Contact:** il-praktikum.ase@xcit.tum.de

3) **Seminar (IN0014, IN2107, IN4893):** 5 ECTS

- **Effort per week:** ~ 1 day
- **Final document:** seminar paper + presentation
- **Contact:** il-seminar.ase@xcit.tum.de

Additional Tasks in the **Praktikum** Interactive Learning



- Conduct project work
 - Find and document issues in Artemis
 - Suggest new feature for Artemis in a feature request
 - Test newly developed features for Artemis
- Create a project report and present it in front of an audience
- **Voluntary:** participate in the development of Artemis
 - Investigate the applied learning theories, e.g. interactive learning
 - Customize and extend learning tools to support the conduction of large courses
 - Present the results at the end of the course



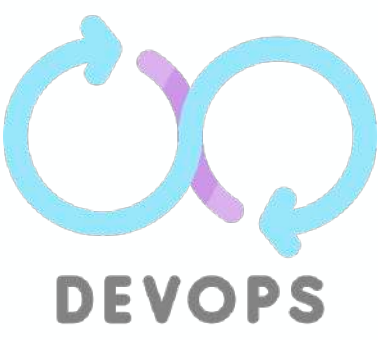

Additional Tasks in the **Seminar** Interactive Learning



- Apply scientific research
 - Conduct a literature research
 - Conduct a small questionnaire or a set of interviews with
 - Analyze and evaluating gained data
- Write a seminar paper and present it in front of an audience

Participation options

Preparation of
a new course

				
	ITP	PSE	DevOps	PGdP
Contract	X			X
Practical Course	X	X		
Seminar			X	



Introduction to Programming (ITP)

- **Number of students:** ~ 800 management students
- **Lecture:** Wednesday, 14:00 - 18:00 (Interims II - Lecture Hall 1)
- **Language:** English
- **Exercise concept**
 - **Weekly:** in-class exercises, tutor groups with exercises, homework
 - **Grading:** intermediate exam, project work, final exam
- **Tutor responsibilities:**
 - Support the creation/maintenance of programming exercises (onsite)
 - Hold a tutor group (3 hours, onsite)
 - Help in the lecture and exam conduction (onsite)
 - Answer students' questions (online via Artemis)
- **Point of contact:** Ramona Beinstingel (itp.ase@xcit.tum.de)



Patterns in Software Engineering (PSE)

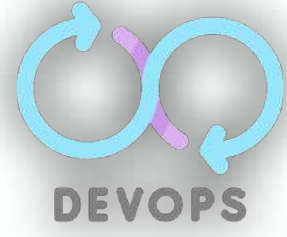
- **Number of students:** ~ 800 informatics students
- **Lecture:** Monday, 10:00 - 14:00 (MI HS1)
- **Language:** English
- **Exercise concept**
 - **Weekly:** in-class exercises
 - **Grading:** Final exam
- **Tutor responsibilities**
 - Support the creation/maintenance of programming exercises (onsite)
 - Help in the lecture and exam conduction (onsite)
 - Answer students' questions (online via Artemis)
- **Point of contact:** Maximilian Sölch (pse.ase@xcit.tum.de)



Praktikum Grundlagen der Programmierung (PGDP)



- **Number of students:** ~ 2000 students (Informatics, Information Systems, ...)
- **Language:** German
- **Exercise concept**
 - **Weekly:** tutor groups with exercises, homework
 - **Grading:** intermediate programming sessions (ÜPAs, onsite)
- **Tutor responsibilities**
 - Support the creation/maintenance of programming exercises (onsite)
 - Hold a tutor group (3 hours, onsite)
 - Help in the exam conduction (onsite)
- **Point of contact:** Maximilian Anzinger
- Apply for contract via **ASTRA** <https://astra.cit.tum.de>



Preparation of a new course: DevOps

- **Content**

- Research interactive learning concepts and design DevOps exercise concepts (in class and project based)
- Requirements engineering for interactive learning tooling

- **Format**

- Form small groups to work on assigned DevOps learning goals: each team member designs at least one exercise concept and provides feedback on the concepts within your team
- Write a seminar paper about your exercise concept

- **Schedule**

- Kickoff: 15.10.24 17:00 (tentative)
- Weekly Meetings
- Peer Review
- Final Presentation: CW 06 - 2025

- **Point of contact:** Matthias Linhuber

Prerequisites for the course - What we expect from you



- **Required:** you passed ITP, PGDP or a similar course
- **Optional:** you passed EIST, PSE or a similar course
- You have good knowledge in programming and software engineering
- You can explain the underlying concepts of programming and software engineering in an understandable and easy manner
- You want to deepen your knowledge of programming and software engineering
- You are motivated to support the students in the best possible way

Application

- 1) Fill out the application on <https://collab.dvb.bayern/x/GAVgM>
(**latest** until July 8, 12:00)
- 2) We will review your application and invite you for an interview
(**latest** until July 9, 12:00)
- 3) Choose an interview time slot
(**latest** until July 10, 12:00)
- 4) Come **prepared** to an interview
(conducted virtually on July 11 and July 12)
- 5) We inform you about your participation
(**latest** until July 15, 18:00)
- 6) **Only for Praktikum and Seminar**
Prioritize in the matching system
(**latest until July 16**)



For contracts, there will be a second application round

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