

# Requirement Engineering

## Lecture 0: Organization

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## Team



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## Research Group

- **Emerging Technologies for the Circular Economy → ETCE**
- Research focus:
  - Intersection of IT and sustainability
  - Circular Economy and Circular Societies
  - Self-organized, decentralized and distributed systems
  - Localized and resilient food production → watch our mushrooms! ([Link](#))
- Other courses:
  - Emerging Technologies for the Circular Economy (SS – M.Sc.)
  - The Limits to Growth – Sustainability and the Circular Economy (SS – open for everyone)

## Research Group

- Website – [Link](#)
  - Course material
  - Thesis/project topics
  - Publications
  - Etc.
- Our research in action:
  - ZDF documentary (German) – [Link](#)
  - Klartext Preis 2020 (German) – [Link](#)
- You want join us? Write us an email!
- → [benjamin.leiding@tu-clausthal.de](mailto:benjamin.leiding@tu-clausthal.de)

## Course Content

- Core terminology and core tasks of requirements engineering
- Requirements engineering process
- Elicitation techniques
- Documentation methods
- Textual, model-based and formal requirements specification
- Requirements negotiation
- Requirements Management
- Traceability
- Requirements validation and quality assurance

## Learning Outcome

- Core terminology and core tasks of requirements engineering
- Understanding of the requirements engineering process
- Ability to choose, justify and apply appropriate methods and techniques for each step of the requirements engineering process given project constraints and properties

## Disclaimer

- The course modelled and built based on the book „*Requirements Engineering – Fundamentals, Principles and Techniques* (2010)” from Klaus Pohl
- Special thanks to Prof. Dr. Steffen Herbold and Dr. Christian Bartelt, who provided valuable input in the form of the teaching materials of their requirements engineering courses.

## Course Content

Requirements Engineering					
Requirements Analysis				Requirements Management	
Elicitation	Negotiation	Documentation	Validation	Change Management	Tracing



## Lectures

- 26.10.2022 → No lecture
- 02.11.2022 → Organization (L00) + Introduction (L01)
- 09.11.2022 → System Context Boundaries and Types of Requirements (L02)
- 16.11.2022 → Elicitation – Part 1 (L03)
- 23.11.2022 → Elicitation – Part 2 (L04) and Negotiations (L05)
- 30.11.2022 → Documentation – Introduction (L06)
- 07.12.2022 → Documentation – Textual Requirements Specification (L07)
- 14.12.2022 → Documentation – Model-based Requirements Documentation (L08)
- 21.12.2022 → No Lecture
- 11.01.2023 → Documentation – Formal Requirements Specification (L09)
- 18.01.2023 → Validation (L10)
- 25.01.2023 → Traceability (L11)
- 01.02.2023 → Requirements Management (L12) and Tool Support (L13)
- 08.02.2023 → Exam Q&A

## Exercises

- 09.11.2022 → Exercise 01 – Knowledge Test (MC)
- 23.11.2022 → Exercise 02 – Elicitation I
- 30.11.2022 → Exercise 03 – Elicitation II
- 14.12.2022 → Exercise 04 – Agent-oriented Modelling
- 21.12.2022 → No Exercise
- 11.01.2023 → Exercise 05 – Coloured Petri Nets I
- 18.01.2023 → Exercise 06 – Coloured Petri Nets II
- 25.01.2023 → Bonus Task
- 01.02.2023 → Exercise 07 – Management and Traceability (MC)

## Course Organization

- Organization of the lecture:
  - Slides are available via Github ([Link](#))
    - Please report bugs!
  - Lectures and exercises live stream (BBB – next slide) and Goslar
  - No lecture recordings
  - Exercise time slots = Time for questions and eventual tutorials related to the exercises
- 
- Questions? Write us an email: [etce-re@tu-clausthal.de](mailto:etce-re@tu-clausthal.de) ← **We will only respond to**
  - **emails written to this specific email address!**

## Dates/Times/Locations

- Lecture:
  - Wednesday **2:15 pm to 3:45 pm** (Berlin time) – **02.11.2022 to 08.02.2023**
  - Location: Goslar Gotec (Am Stollen 19 C, 38640 Goslar, Germany) or via BigBlueButton ([Link](#))
  
- Exercise / Q&A:
  - Wednesday **4 pm to 5:30 pm** (Berlin time) – **02.11.2022 to 08.02.2023**
  - Only via BigBlueButton ([Link](#))

## Exercises

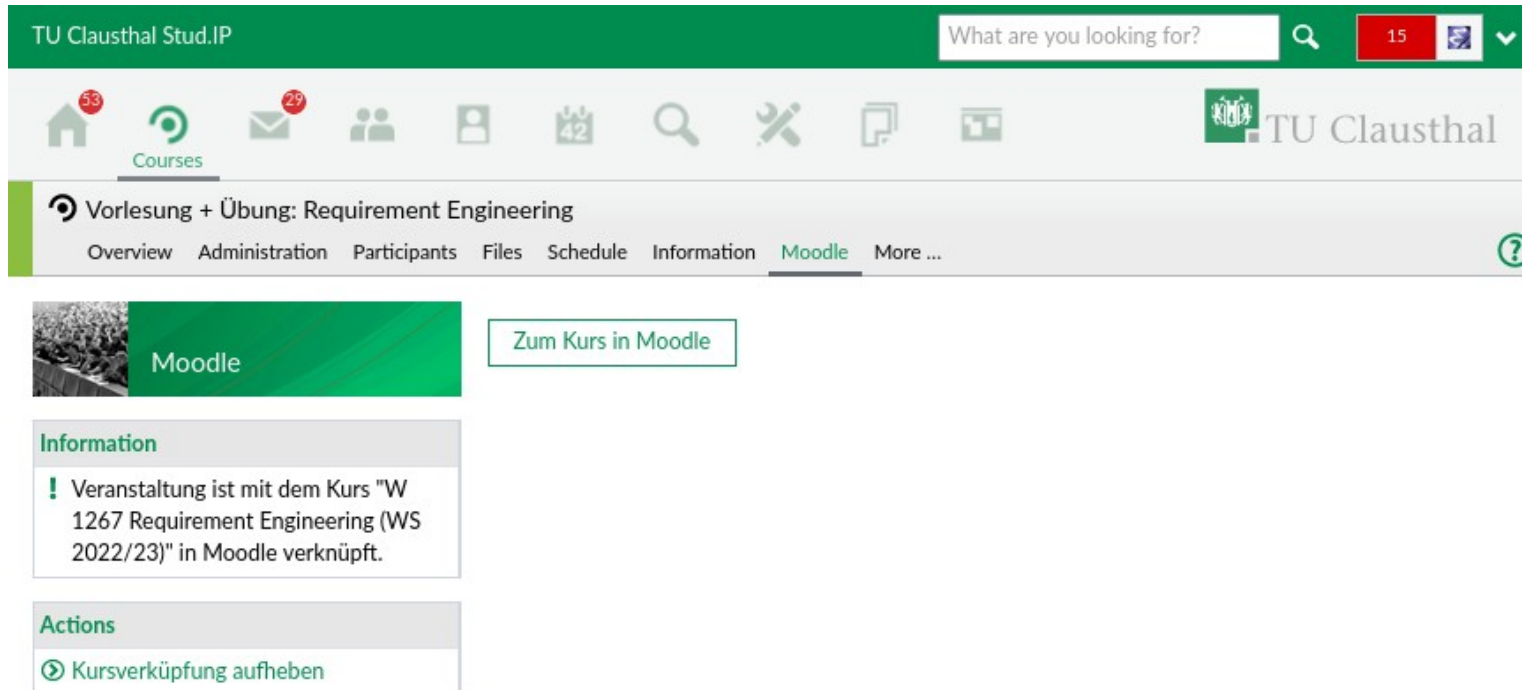
- Organization of the exercise:
  - Individual work → **no** group submissions
  - Multiple-Choice or practical tasks
  - 7-14 days to submit (depending on the task)
  - Submission deadline is always Wednesday at 1:59pm (right before the next lecture)
  - **Submission of each exercise is mandatory**

## Exercises

- Bonus task:
  - You may miss/fail one of the regular exercises
  - Submitting **AND** passing the bonus task substitutes the missed/failed exercise
  - **Bonus task will be very difficult** → don't "plan" with the bonus task. Rather submit and pass the regular exercises.

# Multiple-Choice Exercises

Step-1: Navigate to Moodle on your studip, select "Zum Kurs in Moodle"



The screenshot shows the TU Clausthal Stud.IP interface. At the top is a green header with the text 'TU Clausthal Stud.IP' and a search bar. Below the header is a navigation bar with icons for home, courses, mail, users, calendar, search, settings, and documents. The 'Courses' icon is highlighted. Below the navigation bar is a section for 'Vorlesung + Übung: Requirement Engineering' with tabs for Overview, Administration, Participants, Files, Schedule, Information, Moodle, and More ... The 'Moodle' tab is selected. Below the tabs is a 'Moodle' section with a green background and a button labeled 'Zum Kurs in Moodle'. Below this is an 'Information' section with a warning icon and text: '! Veranstaltung ist mit dem Kurs "W 1267 Requirement Engineering (WS 2022/23)" in Moodle verknüpft.' Below the information is an 'Actions' section with a button labeled 'Kursverknüpfung aufheben'.

# Multiple-Choice Exercises

Step-2 : Select "Exercise 1"

## W 1267 Requirement Engineering (WS 2022/23)

[Dashboard](#) / [My courses](#) / [W 1267 Requirement Engineering \(WS 2022/23\)](#) / [General](#) / [Exercise 1 \(Knowledge Test + Lecture 01-02\)](#)

### Exercise 1 (Knowledge Test + Lecture 01-02)

This quiz tests your understanding of prerequisite knowledge and content from Lecture 1 (RE Introduction) and Lecture 2 (System and Context Boundaries)

**You must score at least 50% to pass the quiz.**

**Incorrect choices can result in negative points.** An incorrect choice in a question will take away **just as many points** as a correct choice is awarded.

Attempts allowed: 1

The quiz will not be available until Wednesday, 9 November 2022, 4:00 PM

This quiz will close on Wednesday, 16 November 2022, 1:59 PM.

Time limit: 30 mins

This quiz is not currently available

[Back to the course](#)



## Multiple-Choice Exercises

Step-3 : Start your test if you are ready

Knowledge Test + Lecture 01-02)

Start attempt

Time limit

Your attempt will have a time limit of 30 mins. When you start, the timer will begin to count down and cannot be paused. You must finish your attempt before it expires. Are you sure you wish to start now?

Start attempt

Cancel

## Multiple-Choice Exercises

Step-4 :

- A. Sequence of questions
- B. Timer running for the test
- C. Navigate to next question/Finish attempt
- D. Navigate to previous question

Question **2**

Not yet answered

Marked out of 1.00

Flag question

Edit question

Demo Question text

Select one or more:

☐ a. Option

☐ b. Option

Previous page

Finish attempt ...

Quiz navigation

1 2 | A

Finish attempt ...

Time left 0:24:40

Start a new preview

D

C

B

# Examination

- **Prerequisites** for admission to the final exam (**all** criteria have to be fulfilled):
  - Successful completion of the compulsory seven exercises
    - You pass an exercise if you score 50% (or more)
    - You have to submit **every** exercise
- **Final exam:**
  - 22.02.2023 → 14:00 – 16:00
  - Written exam (120min)

## Self-Study Star

Self-Study Star → 

- Slides with the self-study star indicate optional/additional study material that is **not** mandatory but could be helpful for your future career
- Of course it won't hurt to have extra knowledge to impress us during the examination ;)

## Literature

- This course is not based on a single book and you **do not** need to buy a book to pass the exam.
- K. Pohl. *Requirements Engineering – Fundamentals, Principles and Techniques* (2010).
- K. Pohl, C. Rupp. *Requirements Engineering Fundamentals: A Study Guide for Requirements Engineering Foundation Level* (2011).
- J. Dick, E. Hull, K. Jackson. *Requirements Engineering (4<sup>th</sup> Edition)* (2017).
- Chris Rupp et al. *Requirements Engineering und Management – Das Handbuch für Anforderungen in jeder Situation (7th Edition)* (2021).



# Questions?