

Requirement Engineering

Lecture 0: Organization

Prof. Dr. Benjamin Leiding
Anant Sujatanagarjuna

Team



Prof. Dr. Benjamin Leiding
benjamin.leiding@tu-clausthal.de



M.Sc. Anant Sujatanagarjuna
anant.sujatanagarjuna@tu-clausthal.de

Research Group

- **Emerging Technologies for the Circular Economy → ETCE**
- Research focus:
 - Intersection of IT and sustainability
 - Circular Economy
 - Self-organized, decentralized and distributed systems
 - Machine-to-Everything Economy (M2X Economy)
- 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](#) (work-in-progress)
 - 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

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

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
- **What is this course about, what is it not about?**

Disclaimer

- The course modelled and build based on the book „*Requirements Engineering – Fundamentals, Principles and Techniques* (2010)” from Klaus Pohl
- Special thanks to Prof. Dr. Steffen Herbold and Dr. Christian Barelt who provided valuable input in 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

Lecture Plan

- Block course: 21.02.2022 – 25.02.2022
- Lecture 0 (L00) → Organization
- Lecture 1 (L01) → Introduction
- Lecture 2 (L02) → System Context Boundaries
- Lecture 3 (L03) → Elicitation
- Lecture 4 (L04) → Documentation
- Lecture 5 (L05) → Negotiation
- Lecture 6 (L06) → Validation
- Lecture 7 (L07) → Management
- Lecture 8 (L08) → Traceability
- Lecture 9 (L09) → Tool Support

Exercises

- 21.02.2022 → Exercise 01 – Knowledge Test (MC)
- 22.02.2022 → Exercise 02 – Elicitation
- 23.02.2022 → Exercise 03 – Agent-oriented Modelling
- 24.02.2022 → Exercise 04 – Colored Petri Nets
- 25.02.2022 → Exercise 05 – Management and Traceability (MC)

Times

- Lectures (BBB – [Link](#))
 - 10:00 – 11:30
 - 13:00 – 14:30
- Exercise (BBB – [Link](#))
 - 15:00 – 16:30 → Q&A or specific tutorials

Lectures

- Organization of the lectures:
 - Slide will be uploaded to StudIP
 - Future iterations of the slide set will also be available in our research group Github repository ([Link](#)) and on our website ([Link](#)) → (work-in-progress)
 - Please report bugs ;)
 - Lectures and exercises as live stream
 - Unfortunately, no recordings this semester
 - Exercise time slots = Time for questions and eventual tutorials related to the exercises

Exercises

- Organization of the exercise:
 - Individual work → no group submissions
 - Multiple-Choice or practical tasks
 - 24h to 7 days to submit the exercise (depending on the task)

Exercises

- Organization of the exercise:
 - Individual work → no group submissions
 - Multiple-Choice or practical tasks
 - 24h to 7 days to submit the exercise (depending on the task)

More info on points, percentages, etc. follow on the next slides (Examination)

Examination

- Prerequisite for admission to the final exam (all criteria have to be fulfilled):
 - Successful completion of the compulsory five exercises
 - You pass an exercise if you score 50% (or more)
 - You have to submit every exercise
- Final exam:
 - No Specific date yet
 - Either written exam (120min) **or** oral examination (20-25min)
 - Online vs. lecture room examination → depends on the pandemic and the number of students

Examination

- Prerequisite for admission to the final exam (all criteria have to be fulfilled):
 - Successful completion of the compulsory five exercises
 - You pass an exercise if you score 50% (or more)
 - You have to submit every exercise
- Final exam:
 - No Specific date yet
 - Either written exam (120min) or oral examination (20-25min)
 - Online vs. lecture room examination → depends on the pandemic and the number of students

We will announce the examination format on Wednesday (23.02.2022)

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 (4th Edition)* (2017).
- Chris Rupp et al. *Requirements Engineering und Management – Das Handbuch für Anforderungen in jeder Situation (7th Edition)* (2021).

Questions?