Requirement Engineering

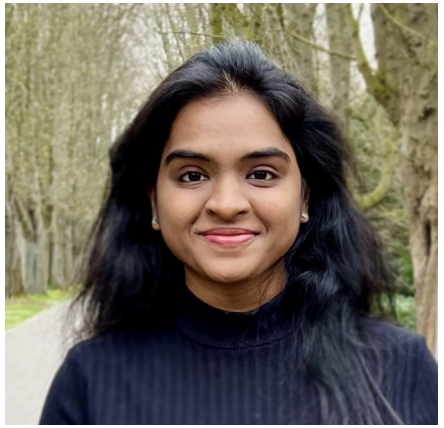
Lecture 0: Organization

Prof. Dr. Benjamin Leiding
M.Sc. Anant Sujatanagarjuna

Team

Prof. Dr. Benjamin Leiding

M.Sc. Anant Sujatanagarjuna



B.Sc. Nisha Muthuraju

Research Group

- **E**merging **T**echnologies for the **C**ircular **E**conomy → **ETCE**
- Research focus:
  - Intersection of IT and sustainability
  - Circular Economy and Circular Societies
  - Self-organized, decentralized and distributed systems
  - Localized and resilient food production
- Other courses:
  - Emerging Technologies for the Circular Economy (SS – M.Sc.)
  - The Limits to Growth – Sustainability and the Circular Economy (WS – 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

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

Week	Date	Lecture	Location
1	30.10.2023	Organization (L00)	BBB (Online+LIVE in Gotec)
2	06.11.2023	Introduction (L01)	MOOC
3	13.11.2023	System Context/Boundaries and Types of Requirements (L02)	MOOC
4	20.11.2023	Elicitation (L03 + L04), Negotiation (L05)	MOOC
5	27.11.2023		
6	04.12.2023	Documentation – Introduction (L06), Documentation – Textual Requirements Specification (L07)	MOOC
7	11.12.2023		
8	18.12.2023	Documentation – Model-based Requirements Documentation (L08), Documentation – Formal Requirements Specification (L09)	MOOC
9	08.01.2024		
10	15.01.2024	Requirements Validation (L10)	MOOC
11	22.01.2024	Requirements Management (L11)	MOOC
12	29.01.2024	Requirements Traceability (L12)	MOOC
13	05.02.2024	Tool Support (L13)	MOOC
14	12.02.2024	-- No Lecture --	
15	26.02.2024	Exam Q&A	BBB (Online+LIVE in Gotec)

Exercises

Publication Date	Submission Deadline	Exercise
13.11.2023	20.11.2023	E01 – Knowledge Test (MC)
27.11.2023	04.12.2023	E02 – Elicitation I, E03 – Elicitation II
18.12.2023	08.01.2024	E04 – Agent-Oriented Modeling
08.01.2024	22.01.2024	E05 – CPN I, E06 – CPN II
22.01.2024	29.01.2024	E07 – Management
29.01.2024	05.02.2024	E08 – Traceability
04.12.2023	15.01.2024	EXX – Bonus Task (Not-Mandatory)

Course Organization

- Organization of the lecture:
  - Massive Open Online Course (MOOC) style asynchronous learning: re.etce-lab.de
  - Course content is mainly delivered as pre-produced learning material.
  - Slides are additionally available via Github (Link)
  - Exercise / Q&A Session live streams (BBB – next slide) and Goslar
  - Exercise time slots = Time for questions and eventual tutorials related to the exercises
- Questions? Write us an email: etce-re@tu-clausthal.de ← **We will only respond to**
  - **emails written to this specific email address!**

Dates/Times/Locations

- Lecture:
  - Monday **2:15 pm to 3:45 pm** (Berlin time) – **30.10.2023** to **12.02.2024**
  - Location: Goslar Gotec (Am Stollen 19 C, 38640 Goslar, Germany) or via BigBlueButton (Link)

- Exercise / Q&A:
  - Monday **4 pm to 5:00 pm** (Berlin time) – **30.10.2023** to **12.02.2024**
  - 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 Monday at 1:59pm (right before the next lecture period)
  - **Submission of each exercise is mandatory**

Exercises

- Multiple-choice exercises: Self-evaluated, available directly on the MOOC website.
- Practical Tasks: Submitted via Moodle.
- Bonus task:
  - You may miss/fail one of the regular practical 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.

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:**
  - 04.03.2024 → 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 (4th Edition)* (2017).
- Chris Rupp et al. *Requirements Engineering und Management – Das Handbuch für Anforderungen in jeder Situation (7th Edition)* (2021).

Questions?