

Exercise

Empirical Model Building and Methods (Empirische Modellbildung und Methoden)

Michael Kläs

SS 2016

Administrative Information

Outline

- Purpose
- Organization
- Schedule
- Administrative information

Purpose

- **Discussing and complementing the content of the lecture**
- **Gathering experience in the empirical evaluation of software technologies**
- **Learning to review empirical evaluations (controlled experiments)**
- **Preparing the examination**

- **Overview**
 - Students will build teams up to 3 members.
 - During the semester, each team will be responsible for:
 - Analyzing and improving a published controlled experiment in software engineering context
 - Documenting and presenting their results
 - During the semester, each team will be responsible for taking part in additional activities, e.g.:
 - Taking part in an empirical evaluation
 - Discussing the analysis of empirical data

The analysis and improvement of an empirical evaluation (along with the submission of the corresponding exercise sheets) during the semester time is mandatory for being allowed to take the exam.

- **How to?**
 1. Each team must
 - **Select a controlled experiment** published in the Journal of Empirical Software Engineering, the International Conference on Software Engineering or in the International Symposium on Empirical Software Engineering and Measurement
 - Published not before 2014 (!)
 2. Teams are expected to
 1. **Solve the assigned tasks** described in each exercise sheet
 2. **Document** their results according to the predefined templates and send them to tutor latest one day before the exercise
 3. **Present** their solutions during the exercise class
 3. Students and tutor will discuss the proposed solutions together in the exercise class.
 4. Teams are expected to enhance their solutions based on the previous discussions

- **Examples for possible papers**
 - Riaz, M., Slankas, J., King, J., & Williams, L. (2014, September). Using templates to elicit implied security requirements from functional requirements-a controlled experiment. In *Proceedings of the 8th ACM/IEEE International Symposium on Empirical Software Engineering and Measurement* (p. 22).
 - Salman, I., Misirli, A. T., & Juristo, N. (2015, May). Are students representatives of professionals in software engineering experiments? In *Proceedings of the 37th International Conference on Software Engineering* (pp. 666-676).
 - Moreno, L., Bavota, G., Di Penta, M., Oliveto, R., & Marcus, A. (2015, May). How can I use this method?. In *Software Engineering (ICSE), 2015 IEEE/ACM 37th IEEE International Conference on* (Vol. 1, pp. 880-890).
- **PDFs can be found via google scholar or publisher**

Schedule

SWS: 1

Schedule: Friday, 13:45-16:00

- | | |
|---------------|--|
| 03.06. | Introduction and assignment of topics
Introduction to inspections, PBR reading |
| 17.06. | Exercise sheet 1: Problem statement and measures
Exercise sheet 2: Research planning |
| 01.07. | Exercise sheet 3: Research design
Exercise sheet 4: Execution and Data Analysis |
| 08.07. | Exercise sheet 5: Replication of a controlled experiment and data analysis
Preparation for the examination
Submission of research design |

Tutor Michael Kläs

Location Room Mainz Mw0.07 (Fraunhofer IESE)

- **Exercise class**
 - Tutor: Michael Kläs
 - Contact: michael.klaes@iese.fraunhofer.de
 - Location: Fraunhofer IESE, Room Mainz (Mw0.07)
 - Website: <http://www.wagse.informatik.uni-kl.de/teaching/ese/ss2016/>