T-76.4602 Software Development Methods

Examination, February 20 2014

Write the following information on each paper you return: name, student number, course code and name, date, signature.

Students are not allowed to use any notes or materials in the exam.

The main guideline: Explain and reason your answers clearly and do not use just a list of bullet points.

After the exam, return this question sheet together with your answer papers.

From the five topics presented, select three and answer all of their sub-questions.
Each numbered topic is worth 10 points, i.e., the total number of points from the exam is 30.

1. Software development activities and teamwork
   - Describe each of the following activities and their purpose: requirements engineering, domain modeling, testing, and software architecture design?
   - How can the six tactics (Eisenhardt et al. 1997) support the modeling work of software development teams?

2. Requirements engineering, domain modeling, and Scrum
   - How can the use case method and user stories be combined with the Scrum method?
   - How can domain modeling be combined with the Scrum method?

3. QUPER model as a software development method
   - What is the QUPER model and its purpose? Give concrete examples.
   - How can the use of the QUPER model support requirements engineering, software architecture design, testing, and iterative software development?

4. Architecturally significant requirements, software architecture design, and agile software development
   - What do architecturally significant requirements (ASR) mean? Give an example of an ASR from the Shape Meal solution, and describe why it is architecturally significant.
   - How and to what degree should agile software development take into account software architecture, software architecture design, and architecturally significant requirements?

5. Quality of testing
   - Why is it important?
   - What do test coverage and test oracle mean, and how are they related to the quality of testing?
   - How can the test oracle utilise requirements and domain models to improve the quality of testing?