Software Quality

Programme course

6 credits

Programvarukvalitet

TDDE46

Valid from: 2021 Spring semester

Determined by
Board of Studies for Computer Science
and Media Technology

Date determined
2020-09-29

Offered for the last time
Spring semester 2022

Main field of study

Information Technology, Computer Science and Engineering, Computer Science

Course level

Second cycle

Advancement level

A1N

Course offered for

- Computer Science and Engineering, M Sc in Engineering
- Industrial Engineering and Management - International, M Sc in Engineering
- Industrial Engineering and Management, M Sc in Engineering
- Information Technology, M Sc in Engineering
- Computer Science and Software Engineering, M Sc in Engineering

Prerequisites

Software engineering.
    Project-based course in computer science or information technology
    Skills in programming in multiple languages.
    Knowledge of discrete mathematics and mathematical statistics

Intended learning outcomes

After completing the course the student should be able to:

- analyze the most common quality factors of software
- design models of how quality factors in software can be measured
- apply tools to improve product quality,
- apply a description language of processes
- analyze processes in a programming project
- apply methods and tools to improve processes,
- assess the product quality of a programming project
- assess the process quality of a programming project
- integrate quality evaluations in an ongoing programming project

Course content

- Metrics for product, process and resources
- The Goal-Question-Metric method
- Tools for measurement, verification and fault detection
- The Essence-standard for describing and working with software development practices
- Quality assurance methods
- Evaluation of an ongoing project
- Choaching of members of an ongoing project
- Write a quality report

Teaching and working methods

Theory is given through lectures.

Laboratory work on tools.

Students are organized into groups, each with responsibility for evaluating and improving quality and quality work with an ongoing student project in the lower years. The group will interact throughout the semester with students from lower years. In a number of seminars the groups share experience and make action plans. Theoretical knowledge is demonstrated by the students in the seminars. The mission can be likened to a consultancy work and ends with a report that participants in the lower year may have as a basis for their bachelor works. Each report contain a common part and an individual investigation.

Examination

| PRA1 | Project | 4 credits | U, 3, 4, 5 |
| LAB1 | Computer lab assignments | 2 credits | U, G |

Project work (4HP) requires coaching of students in TDDD96, participation in 80% of seminars and an approved report. Well-performed seminars and individual analyses can award a higher grade

Grades

Four-grade scale, LiU, U, 3, 4, 5

Course literature

Announced on the course web pages

Other information

Supplementary courses

It is an advantage to read the course Software Architectures at the same time as this course.

About teaching and examination language

The teaching language is presented in the Overview tab for each course. The examination language relates to the teaching language as follows:

- If teaching language is Swedish, the course as a whole or in large parts, is taught in Swedish. Please note that although teaching language is Swedish, parts of the course could be given in English. Examination language is Swedish.
- If teaching language is Swedish/English, the course as a whole will be taught in English if students without prior knowledge of the Swedish language participate. Examination language is Swedish or English (depending on teaching language).
- If teaching language is English, the course as a whole is taught in English. Examination language is English.

Other

The course is conducted in a manner where both men's and women's experience and knowledge are made visible and developed.

The planning and implementation of a course should correspond to the course syllabus. The course evaluation should therefore be conducted with the course syllabus as a starting point.

Department

Institutionen för datavetenskap

Director of Studies or equivalent

Ola Leifler

Examiner

Kristian Sandahl

Education components

Preliminary scheduled hours: 36 h
Recommended self-study hours: 124 h

Course literature

Other