DD2482 Automated Software Testing and DevOps 7.5 credits

Automatiserad programtestning och DevOps

This is a translation of the Swedish, legally binding, course syllabus.

Establishment

The official course syllabus is valid from the autumn semester 2021 in accordance with Head of School decision: J-2021-0887.Decision date: 2021-04-15.

Grading scale

A, B, C, D, E, FX, F

Education cycle

Second cycle

Main field of study

Computer Science and Engineering

Specific prerequisites

Object-Oriented Programming and Algorithms and Data Structures equivalent to one of the courses DD1320, DD1321, DD1325, DD1327, DD1338, DD1339, DD1340, DD1341, DD1346 or ID1020.

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

After passing the course, the student shall be able to

- use different testing libraries, from test harnesses (e.g. xUnit) to assertion libraries (e.g. Hamcrest, Assert4J),
- setup and use infrastructure for parameterized tests, UI tests, monkey tests, fuzz tests,
- use different metrics to assess the quality of a test suite (e.g. mutation score),
- use and extend test data and test case generators,
- setup and deploy continuous integration (e.g. Jenkins) and continuous testing in the context of DevOps

in order to

- be able to design, implement and maintain industrial-grade software tests for object-oriented programs,
- in the working life be able to work with DevOps.

Course contents

- Software testing foundations.
- Design, deployment and usage of testing infrastructure.
- The role of software testing within different software development processes.

Examination

- ÖVN1 - Exercise, 7.5 credits, grading scale: A, B, C, D, E, FX, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

If the course is discontinued, students may request to be examined during the following two academic years.

Project-based examination: 3 graded projects.

Ethical approach

- All members of a group are responsible for the group's work.

- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.