DD2459 Software Reliability 7.5 credits

Programvarutillförlitlighet

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

Establishment

Course syllabus for DD2459 valid from Spring 2012

Grading scale

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

Education cycle

Second cycle

Main field of study

Computer Science and Engineering

Specific prerequisites

In this course all the regulations of the code of honor at the School of Computer science and Communication apply, see: http://www.kth.se/csc/student/hederskodex/1.17237?l=en_UK.

Language of instruction

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

Intended learning outcomes

After the course the student shall be able to:

- identify the basic activities needed for software testing, including requirements capture, test planning, test case generation, test case execution, fault diagnosis and fault correction,
- construct requirements models for simple embedded, reactive and object-oriented systems,
- construct a test suite for a simple requirements model,
- assess the quality of a test suite according to a variety of coverage models.

Course contents

The course will cover the following topics:

- software testing concepts according to the V-model
- graphical requirements modeling, including use case modeling
- logical requirements modeling, including preconditions, postconditions and class invariants
- graph coverage models
- logic coverage models
- input space partitioning
- syntax based testing
- reliability models
- advanced topics such as automated and model based testing.

The theoretical subjects are supported by laboratories that are intended to deepen the student's understanding of important concepts.

Course literature

Course literature will be announced at least 4 weeks before course start at course web page.

Examination

- TEN1 - Examination, 4.5 credits, grading scale: A, B, C, D, E, FX, F
- LAB1 - Laboratory Work, 3.0 credits, grading scale: P, 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.

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.