FDD3452 Formal Methods 7.5 credits

Formella metoder

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

Establishment

Course syllabus for FDD3452 valid from Autumn 2019

Grading scale

P, F

Education cycle

Third cycle

Specific prerequisites

Language of instruction

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

Intended learning outcomes

Upon passing the course, the students will be able to:

1. Model program behaviour.
2. Formalize requirements on program behaviour.

3. Express requirements for verification with tools.
4. Verify requirements with tools.
5. Explain the theory and algorithms behind the tools.

Course contents

1. Automated Deductive Verification
2. Automated Theorem Proving
3. Temporal Logic
4. Model Checking
5. Predicate Abstraction

Course structure

- 7 two-hour lectures
- 7 two-hour tutorial sessions
- 6 homework assignments, peer-reviewed at the tutorial sessions
- 2 laboratory assignments
- 1 final takehome exam, defended orally

Course literature

Parts of the book Michael Huth, Mark Ryan: Logic in Computer Science, and various papers.

Examination

- EXA1 - Written exam, 7.5 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.

Other requirements for final grade

One needs to pass the homework assignments, the laboratory assignments, and the take-home exam.

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.