FDD3006 Temporal Logic 4.0 credits

Temporal logik

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

Establishment

Course syllabus for FDD3006 valid from Autumn 2009

Grading scale

G

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

The course is intended to give students a compact, but thorough, introduction to the topic of temporal logic and its theoretical foundations. The main audience is graduate and postgraduate students in computer science, and engineering students with a good background in logic and discrete structures. Upon completion of the course, the student will develop a working

understanding of the main mathematical tools and techniques in the area of temporal logic and be able to use these techniques in other contexts related to temporal logic, and in the critical examination of published work in the area.

Course contents

Temporal logic concerns the problem of expressing and proving interesting properties of time-dependent systems. Many variants of temporal logic have been studied over the past 20 years or so, involving discrete or continuous time, interval or point-based reasoning, and explicit or implicit time or probabilities. In this short course we focus on propositional linear time temporal logics. LTL is used widely in computer science and software engineering for program specification and verification, and in the course we cover its main theoretical underpinnings in terms of axiomatizability, expressiveness, and decidability.

Examination

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

Active participation at lectures. Attendance is compulsory. Please notify the course instructor if you are not able to attend a lecture.

Submission of solutions to the home assignments.

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.