

Logic

Programme course

6 credits

Logik

TDDD72

Valid from: 2017 Spring semester

Determined by

Board of Studies for Computer Science
and Media Technology

Date determined

2017-01-25

Main field of study

Mathematics, Computer Science

Course level

First cycle

Advancement level

G1X

Course offered for

- Computer Science and Software Engineering, M Sc in Engineering
- Mathematics

Entry requirements

Note: Admission requirements for non-programme students usually also include admission requirements for the programme and threshold requirements for progression within the programme, or corresponding.

Prerequisites

Discrete mathematics

Intended learning outcomes

The aim of the course is that the students should gain an understanding of the basic concepts of logic as well as applications of logic in computer science. After the course the student will be able to:

- explain basic concepts in logic
- formulate sentences in first-order logic
- show different relations between formulas and sets of formulas
- prove logic formulas using tableaux and/or resolution

Course content

Formal syntax and semantics of propositional and predicate logic. Concepts like consistency, consequence and equivalence, plus proofs and refutations of these properties. Reasoning using formal proof systems, in particular tableaux and resolution. Soundness and completeness.

Teaching and working methods

The course consists of a series of lectures and a number of problem solving seminars.

Examination

TEN1 Written examination 6 credits U, 3, 4, 5

Grades

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

Other information

Supplementary courses: Logikprogrammering

Department

Institutionen för datavetenskap

Director of Studies or equivalent

Peter Dalenius

Examiner

Andrzej Szalas

Course website and other links

Education components

Preliminary scheduled hours: 40 h

Recommended self-study hours: 120 h

Course literature

Ben-Ari, Mordechai (2001) Mathematical Logic for Computer Science. ISBN 1-85233-319-7.

Common rules

Regulations (apply to LiU in its entirety)

The university is a government agency whose operations are regulated by legislation and ordinances, which include the Higher Education Act and the Higher Education Ordinance. In addition to legislation and ordinances, operations are subject to several policy documents. The Linköping University rule book collects currently valid decisions of a regulatory nature taken by the university board, the vice-chancellor and faculty/department boards.

LiU's rule book for education at first-cycle and second-cycle levels is available at http://stydokument.liu.se/Regelsamling/Innehall/Utbildning_pa_grund-_och_avancerad_niva.