SYLLABUS

Discrete Mathematics 7.5 credits M0009M

Diskret matematik

Course syllabus admitted: Autumn 2023 Sp 1 - Present

DECISION DATE
2022-02-14

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LULEÅ TEKNISKA UNIVERSITET

Discrete Mathematics 7.5 credits M0009M

Diskret matematik

First cycle, M0009M

Education level	Grade scale	Subject	Subject group (SCB)
First cycle	G U 3 4 5	Matematik	Mathematics

Main field of study

Computer Science and Engineering

Entry requirements

In order to meet the general entry requirements for first cycle studies you must have successfully completed upper secondary education and documented skills in English language +
Swedish upper secondary school courses Mathematics 3c or Mathematics D.

Selection

The selection is based on final school grades or Swedish Scholastic Aptitude Test.

Course Aim

After completed course, the students should:

Knowledge and understanding

- be able to give an account of central concepts in combinatorics, logic, set theory, theory of whole numbers, graph theory, theory of automata, modular arithmetic and reccurence equations.
- be able to give an account of the logical connection between occurring concepts.

Competence and skills

- demonstrate ability to identify problems which can be solved with methods from the course and to choose the appropriate method.
- be able to, in a well-structured way, solve and explain the solution to problems within the course.
- be able to integrate various parts from the course.

Contents

This course treats basic principles in discrete mathematics, separated into the following seven main categories:

- Combinatorics: permutations, combinations, inclusion/exclusion and Striling number of the second kind.
- Logic and set theory.
- Theory of whole numbers: induction and recursion, prime numbers and modular arithmetic.
- Functions and relations.
- Graph theory.
- Theory of automata.
- Recurrence equations.

Realization

Each course occasion´s language and form is stated and appear on the course page on Luleå University of Technology's website.
The teaching consists of lectures and tutorials. The main learning is achieved by home studies, mainly problem solving.

Examination

If there is a decision on special educational support, in accordance with the Guideline Student's rights and obligations at Luleå University of Technology, an adapted or alternative form of examination can be provided.
The course aims are examined by a written individual exam. Grading according to the scale U 3 4 5.

Unauthorized aids during exams and assessments

If a student, by using unauthorized aids, tries to mislead during an exam or when a study performance is to be assessed, disciplinary measures may be taken. The term “unauthorized aids” refers to aids that the teacher has not previously specified as permissible aids and that may assist in solving the examination task. This means that all aids not specified as permissible are prohibited. The Swedish version has interpretative precedence in the event of a conflict.

Overlap

The course M0009M is equal to MAM200

Course offered by

Department of Engineering Sciences and Mathematics

Modules

Code	Description	Grade scale	Cr	Status	From period	Title
0002	Written exam	G U 3 4 5	7.5	Mandatory	A21	

Study guidance

Study guidance for the course is to be found in our learning platform Canvas before the course starts. Students applying for single subject courses get more information in the Welcome letter. You will find the learning platform via My LTU.

Last revised

by Niklas Lehto, Programme Director 2022-02-14

Syllabus established

The syllabus is valid from H07(Autumn 2007)