



# LT1053 Subject-based Teaching and Learning in Mathematics

## 8.0 credits

Ämnesdidaktik matematik

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

If the course is discontinued, students may request to be examined during the following two academic years

### Establishment

The official course syllabus is valid from the autumn semester 2022 in accordance with the decision by the Dean of school: M-2022-0956. Decision date: 10/06/2022

### Grading scale

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

### Education cycle

First cycle

### Main field of study

### Specific prerequisites

General entry requirements for higher education

# Language of instruction

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

## Intended learning outcomes

After passing the course, the student should be able to:

1. give an account of and illustrate subject-specific aspects of the teaching process and how these influence different ways to plan, carry out and evaluate teaching in the mathematics subject, on the basis of the regulations
2. give an account of and illustrate subject-specific aspects of assessment and how different assessment forms concretely can be applied to evaluate pupils' knowledge in the mathematics subject
3. account for how problem-solving, modelling and/or equivalent pupil activating education in the mathematics subject can be planned, be carried out and be evaluated and analyse their advantages and disadvantages
4. give an account of how interdisciplinary perspectives, such as the democracy assignment, equality, equal opportunities, sustainable development and ethics can be integrated in practice in the teaching.
5. account for how both analogue and digital learning resources can be integrated in practice in the teaching

## Course contents

The course starts with subject-specific aspects, such as how the subject has developed, different views on knowledge in the subject, the connection of the subject (or the lack of connection) to the textbooks, the view of the teacher on the subject and how the background of the teacher influences this view.

Thereafter, pupils' learning and the teaching process follow (plan, carry out and evaluate) on the basis of current mathematics didactic research and regulations related to the different parts of the mathematics subject. Special focus in that respect is put on pupil activating learning, such as problem-solving and modelling. Assessment forms and their application in practice is treated.

Finally, applications of interdisciplinary perspectives, such as equality, equal opportunities, sustainable development and ethics are included and how both analogue and digital learning resources can be integrated in practice in the teaching.

## Examination

- INL1 - Hand-in assignment, 3.0 credits, grading scale: A, B, C, D, E, FX, F
- INL2 - Hand-in assignment, 4.0 credits, grading scale: A, B, C, D, E, FX, F
- INL3 - Hand-in assignment, 1.0 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.

## **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.