LT1053 Subject-based Teaching and Learning in Mathematics 8.0 credits

Ämnesdidaktik matematik

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

Establishment

The official course syllabus is valid from the spring semester 2024 in accordance with the decision by the Director of First and Second Cycle Education M-2024-0569. Date of decision: 2024-04-15

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

Course contents

In the course LT1053 you will specialise in aspects of teaching and learning pertaining to the didactics of mathematics. The course is divided into the following modules:

- Aspects of the didactic triangle (the subject/pupils/teacher) pertaining to the didactics of mathematics In this module, the focus is on the mathematics subject per se (e.g. how the subject has evolved, different views on knowledge in the subject, the connection (or the lack thereof) to textbooks), pupils' interest, preconditions, etc. in relation to the subject and how these aspects are influenced by teachers' attitudes and background. The concepts of didactic questions and the didactic contract are also brought up.
- The process of teaching mathematics: How can we plan – carry out – evaluate mathematics instruction that promotes pupils' learning? This module is integrated with the two halves of the placement period (plan & carry out; evaluate)
- Assessment of pupils' learning in mathematics.
- How the democracy mission, equality, equal opportunities, sustainable development, digitisation and ethics and other topics (so-called interdisciplinary perspectives) 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
- INL4 - Hand-in assignment, 2.0 credits, grading scale: A, B, C, D, E, FX, F

- INL5 - Hand-in assignment, 2.0 credits, grading scale: A, B, C, D, E, FX, F
- SEM1 - Seminars, 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.

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

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.