



# LT1049 Mathematics Didactics

## 2 7.5 credits

### Matematikdidaktik 2

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

On 15/10/2021, the Dean of the ITM School has decided to establish this official course syllabus to apply from autumn term 2022 (registration number M-2021-2031).

### Grading scale

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

### Education cycle

First cycle

### Main field of study

Technology

### Specific prerequisites

General entry requirements.

### Language of instruction

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

## Intended learning outcomes

1. Make short and long term didactic plannings with special focus on students with different individual prerequisites for learning
2. Design a practical lesson by using a variety of approaches
3. Demonstrate an understanding of the process of developing and planning curricula
4. Use different models and stages to develop curricula
5. Apply different strategies to examine the validity and reliability of test assignments
6. Analyse assessment material from both national and international examinations
7. Explain research-based principles for assessment, mapping and measures and how one can use them practically

## Course contents

This course will deepen mathematics didactic knowledge based on didactic research and practice-based knowledge. The course intends to develop basic knowledge and practice about the development of students' mathematical abilities and how one follows up the students' learning process. Content that is brought up:

- Principles of school mathematics
- Efficient teaching and learning in mathematics in the classroom
- Reflective teaching and teaching strategies,
- Curriculum design in mathematics
- Mathematical abilities in the curriculum and in didactic research
- Students with special needs and students with special abilities that need additional challenges
- Common misconceptions regarding mathematics among pupils in school year 7-9
- Didactic focus on analysis in a variable, vector algebra and discrete mathematics.
- The affective, cognitive and psycho-motoric domains of the learning
- Formative and summative assessment and grading
- Design of tests and the validity and reliability of test assignments
- Swedish pupils' results in international knowledge measurements

· Didactic focus on selected fields in mathematics subject of the Swedish primary and lower-secondary school.

## Examination

- KON1 - Partial examinations, 2.0 credits, grading scale: A, B, C, D, E, FX, F
- PRO1 - Project, 3.0 credits, grading scale: A, B, C, D, E, FX, F
- TEN1 - Written examination, 2.5 credits, grading scale: A, B, C, D, E, FX, 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.