



Course syllabus

Faculty of Technology

Department of Mathematics

1MD123 Matematikdidaktik för åk. 7-9 och gymnasiet III, 7,5 högskolepoäng

1MD123 Mathematics Education for Lower Secondary and Upper Secondary School III, 7.5 credits

Main field of study

Mathematics

Subject Group

Mathematics

Level of classification

First Level

Progression

G1F

Date of Ratification

Approved 2012-12-10

Revised 2023-07-06 by Faculty of Technology. Literature list is revised.

The course syllabus is valid from autumn semester 2023

Prerequisites

1MD121 Mathematics Education for lower secondary and upper secondary school I, 7.5 credits or equivalent.

Objectives

After completion of the course, students should be able to:

- demonstrate knowledge of the relationship between skills, mathematics content and working arrangements in lower secondary and upper secondary school mathematics teaching and apply this knowledge to meet and develop students' mathematical abilities
- demonstrate advanced knowledge to interpret goals and grading criteria in lower secondary and upper secondary school mathematics and their implications for teaching and assessment of student performance
- demonstrate the ability to plan, implement and evaluate mathematics teaching
- demonstrate knowledge of the role of language in mathematics, for conceptualization, communication and classroom norms
- analyze student solutions, teaching materials and tests, especially the national

tests

- apply formative and summative assessment, grading, documenting students' skills for different purposes.

Content

The following will be analyzed and discussed in the course: the link between skills, mathematics content and working in grades 7-9 and upper secondary mathematics education in relation to the direct work in the classroom with a focus on applying this knowledge to meet and develop students' mathematical abilities. Progression of policy documents in mathematics, focusing on the objectives, content and grading criteria as well as their implications for the teaching and assessment of student performance will be addressed in the course. Variation of work methods, work and content to support student learning related to planning, implementing and evaluating mathematics education. Standards, communication and role of language in conceptual development will be analyzed through concrete class room situations. The grading practice impact on teaching practice and vice versa, is paramount. Analysis of student solutions, study materials and exams, especially national tests will be discussed in the course. The course covers general different assessment situations, student performance, reviews, consequences. Moreover, the differences between assessment and grading will be elucidated.

Type of Instruction

Teaching consists of lectures, group exercises and mandatory seminars. Part of the course may be online.

Examination

The course is assessed with the grades Fail (U), Pass (G) or Pass with Distinction (VG).

The course is examined through active participation in seminars, methodology sessions, and presentations, as well as through oral and written presentations of individual and group assignments, and or through written examination.

Repeat examination is offered in accordance with Local regulations for courses and examination at the first and second-cycle level at Linnaeus University.

If the university has decided that a student is entitled to special pedagogical support due to a disability, the examiner has the right to give a customised exam or to have the student conduct the exam in an alternative way.

Course Evaluation

During the implementation of the course or in close conjunction with the course, a course evaluation is to be carried out. Results and analysis of the course evaluation are to be promptly presented as feedback to the students who have completed the course. Students who participate during the next course instance receive feedback at the start of the course. The course evaluation is to be carried out anonymously.

Credit Overlap

The course cannot be included in a degree along with the following course/courses of which the content fully, or partly, corresponds to the content of this course: Module 1 in 2MAÄ02 and 2MAÄ08, 7.5 credits

Required Reading and Additional Study Material

Reading list

Gustavsson, Anders; Måhl, Per; & Sundblad, Bo (2014). Betygssättning en handbok. Liber. ISBN: 9789147099498. 100 pages

Hansen, Hans Christian; Jess, Kristine; Schou, John & Skott, Jeppe (2010). Matematik för lärare, Ypsilon band 1 och band 2, ISBN: 13: 9789140668134 och ISBN13:9789140667861 (approx 40 pages each)

Hansen, Hans Christian; Skott, Jeppe; Jess, Kristine & Lundin Sverker (2010). Matematik för lärare, Delta Didaktik, ISBN: 9789140671462. Approx 200 pages.

Kilborn, Wiggo & Löving, Madeleine (2002). Baskunskaper i matematik. Lund, Studentlitteratur. ISBN13: 9789144022178. Approx 90 pages.

Nordgren, Kenneth; Odenstad, Christina & Samuelsson, Johan (red.). (2017 eller senast upplagan) Betyg i teori och praktik. Gleerups. ISBN: 9789140692641. Approx 100 pages.

Pettersson, Astrid; Olofsson, Gunilla; Kjellström, Katarina; Ingemansson, Ingmar & Björklund Boistrup, Lisa (2010) Bedömning av kunskap : för lärande och undervisning i matematik. Stockholms universitet ISBN: 9789176566701. Approx 100 pages

Kursplaner och ämnesplaner
Scientific papers 200 pages