Linnæus University

Jnr: 2015/3794-3.1.2

Course syllabus

Faculty of Technology
Department of Mathematical Education

1MD141 Matematikdidaktik 1 för 4-6 - Tal-rum- och begrepp, 7,5 högskolepoäng

Mathematics Education 1 years 4-6 - Numbers-spatial perception and concepts of mathematics, 7.5 credits

Main field of study
Mathematics

Subject Group
Mathematics

Level of classification
First Level

Progression
G1N

Date of Ratification
Approved 2012-12-10
Revised 2015-11-03 by Faculty of Technology.
The course syllabus is valid from spring semester 2016

Prerequisites
General entry requirements and English B, Mathematics B, Natural Science A, Civics A. or: Mathematics 2a/2b/2c, Natural Science 1b/1a1+1a2, Civics 1b/1a1 + 1a2

Objectives

After completing this module the students will be able to:

- demonstrate advanced knowledge of and correctly use basic school mathematics with a focus on arithmetic (natural numbers, integers, rational numbers), numbers and number use, and concepts of mathematics
- apply knowledge of arithmetic (natural numbers, integers, rational numbers), numbers and number use, and concepts in mathematics in didactic activities with a focus on year 4-6
- be able to describe how students in pre-school up to year 3 develop their number perception and be able to build on this knowledge in year 4-6
- explain how mathematics in year 4-6 is the underlying mathematics of 7-9 with respect to the modules elements
- to account for various factors on students' desire and ability to learn mathematics
- explain and apply different forms of representation and working methods in mathematics presented in this module
- explain overall character of the development of mathematics and the history of ideas for this modules math elements.

Content
The module addresses the student's own math skills in arithmetic, with a focus on number perception and number usage and concepts and building of concepts in mathematics combined with didactic perspective relevant to activities in year 4-6. The mathematical content discussed in relation to the abilities that form the basis of the primary school curriculum in mathematics. These abilities linked to mathematics content and the whole is highlighted by focusing on different approaches and strategies to support numbers and concept development. It also deals with factors affecting mathematics teaching in school and giving the desire and opportunity to learn mathematics. Mathematics subject characteristics and historical development are highlighted in a comprehensive, school-oriented perspective with a focus on mathematical constructs and ideas. Mathematics education as a research field is illustrated by studies of research articles relevant to primary school mathematics.

Type of Instruction
The course is conducted through lectures, seminars, methodology sessions and practical sessions. Field study days may be included. Teaching always requires mandatory attendance.

Distance teaching is possible. When given as a distance course special forms of distribution are used appropriate for the method of teaching.

To attend this course you need a field study class or group of pupils.

Examination
The course is assessed with the grades Fail (U), Pass (G) or Pass with Distinction (VG).
The course is assessed partial through active participation in seminars, method meeting and presentations, partial through written and oral presentations of individual and group assignments, and partial through written examination/home exam. Some of examinations are practical elements (field studies) that the student implements and presents. To receive a passing grade (G) the objectives has to be achieved.

Students who do not pass the regular examination will be offered a second examination within six weeks during the regular semester periods.

On request, students may have their credits translated to ECTS-marks. Such a request must be sent to the examiner before the grading process starts.

Course Evaluation
A course evaluation will be carried out and compiled after the course is completed. The compilation will be presented to the current board as well as to the students and filed by the coordinating department.

Credit Overlap
This course cannot be part of a degree in combination with another course in which the content fully or partly correspond to the content of this course: The course overlaps 1MD131 with 7,5 credits, 1MD130 with 7,5 credits module 1, 1MD140 with 7,5 credits module 1.

Required Reading and Additional Study Material
Literature
Häggblom, Lisen. *Med matematiska förmågor som kompass*. Lund: Studentlitteratur

Malmer, Gudrun . *Bra matematik för alla: nödvändig för elever med inlärningssvårigheter* (latest edition). Lund: Studentlitteratur

Skolverket. *Läroplan för grundskolan, förskoleklassen och fritidshemmet 2011* www.skolverket.se/publikationer?id=2575

Compendium and scientific articles, app 200 p. .

Myndigheten för Skolutveckling. Mer än matematik- om språkliga dimensioner i matematikuppgifter. (46 p). www.skolverket.se/publikationer?id=1891

Skolverket. Rapport 2009:5: *Undervisningen i matematik- utbildningens kvalitet och ändamålsenlighet* (28 p) www.skolinspektionen.se/Documents/Kvalitetsgranskning/Matte/granskningsrapport-matematik.pdf

Sollervall, Håkan. Tal: och de fyra räknesätten (latest edition). Lund: Studentlitteratur

Karlsson Natalia, Kilborn Wiggo. Matematikdidaktik i praktiken - Att undervisa i årskurs 1-6. 2015. Malmö: Gleerups Utbildning AB